MISSION
Designers increasingly work to understand and address complex interconnections while creating new things, especially when taking on challenges like social or environmental concerns. People interpret the word “design” in many ways; when “research” is added to the mix, the ambiguity increases. Decipher will bring together design researchers, practitioners, and educators at all stages in their careers to explore the fusions of research and practice through the ways we accomplish, talk about, and teach design research.

ABOUT THE DECIPHER CONFERENCE
Decipher is a hands-on design research conference brought to you by the AIGA Design Educators Community in partnership with the new DARIA Network (Design as Research in the Americas). Decipher will address crucial themes of defining, doing, disseminating, supporting, and teaching design research.

Hosted by the Penny W. Stamps School of Art & Design at the University of Michigan, Decipher:
• connects emerging and experienced design researchers in academia and beyond,
• gathers and share best practices, resources, tools, and exemplary research matter,
• helps participants hone research plans and writing skills, and
• creates opportunities for dialogues that foster mentorship and collaborative connections

THEMES AND TOPICS

1. Defining design research is concerned with the nature of and knowledge produced by design research: what is design research? What is not design research? What are the types of knowledge design research generates? What is the nature of this knowledge?
   • Conducting research to inform the things one makes vs. making things as a form of investigation
   • Defining practice-based research across design disciplines
   • Production, documentation and transfer of knowledge generated by design research
   • Incorporating culturally significant ways of thinking and making

2. Doing design research involves exploring the theories, methods, processes and creative outcomes that support design as a form of inquiry, and how we “do” design research.
   • Developing an academic design research agenda: identifying and framing opportunities, contexts & variables
   • Pivoting to a new research agenda
   • Tacit & explicit knowledge and skills needed for design research
   • Leveraging the AIGA Designer 2025 trends in your research
   • Diversification of the design discipline through research (in terms of cultural perspectives, disciplines, access)
Disseminating design research includes the ways we share this work, such as writing about projects or ideas for publication, and how we communicate the value of design research to other disciplines.

- Writing effectively about design research / Evaluating design research for dissemination
- Advocating for design and design research agendas within the context of larger interdisciplinary projects or research groups
- Sharing design research across channels that engage diverse audiences (in terms of cultural perspectives, disciplines, access)

Supporting design research is concerned with the resources and procedures to sustain financial, institutional, industry, and peer support for design research projects and initiatives, including writing successful grant proposals.

- Writing effectively to fund design research & proposal evaluation
- Anticipating outcomes and assessing design research
- Gaining institutional, peer & industry support for research
- Expanding opportunities for who gets to participate in research
- Grant recipients may share reflections/insights

Teaching design research cultivates an inquisitive mindset in students at the k–12, undergraduate, master’s and PhD levels, and includes sharing methodologies, theories and processes that engage making as a form of knowledge production and understanding.

- Bringing research to the classroom by connecting one’s design research agenda to curricular activities
- Teaching design research at various levels (k–12, undergrad, master’s, PhD, other)
- Research intersections between academia and industry
- Challenging the design research ‘canon’ in the classroom
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Finding and Leveraging Your Through-Line

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Keywords:
narrative, interdisciplinary, research agenda, dissemination, strategy

For pre-tenure academics and interdisciplinary practitioners, articulating the big picture of one’s work or research agenda can be extremely difficult. Often academics and practitioners are tied to “traditional” research methods such as writing and publishing, and hesitate to define practical applications, hands-on making, experimental processes, and other wacky and weird ideas as “research”. This discomfort in calling ourselves researchers can make our projects, sketches, and ideas to feel disconnected, at different stages of development, or even too obtuse to articulate. Yet there is a discoverable through-line in everyone’s oeuvre in the form of an idea, creative process, or theory that can be leveraged. We posit that by discovering and leveraging the through-line of the work from an interdisciplinary perspective, one’s research agenda takes on an individualized focus and a narrative drive especially applicable to the lecture formats required for conferences, speaking engagements, gallery proposals, client acquisition, the academic job-hire process, and beyond.

Academic job searches are one example where the lack of a concise narrative arc when describing one’s research can be extremely problematic. We have experienced the academic hiring process both as candidates and as hiring faculty. We have participated on multiple search committees, as either committee chair or member. Commonly, as part of the academic hiring process, finalist candidates are required to present their work in a 60-minute lecture format, and are expected to describe their research agenda and plans for execution over the multi-year tenure process. Our experience as interviewees, as well as serving on these search committees has allowed us to see how a variety of designers present and discuss their research in an academic setting — some successful and some, not so much. Successful candidates articulate their vision precisely, weaving smaller bodies of work into a larger and sweeping narrative; they foreground their through-line. Ineffective candidates do not establish a through-line; the presentation of their research can appear disorganized, chaotic, and unfocused with the description of every project feeling like the start of a new conversation. These candidates might have great ideas, design skills, and drive, but are unable to communicate the bigger picture of their work, even in cases where it might be apparent to the audience. This lack of awareness and clarity serves as a red flag for the hiring committee. A through-line is necessary because it establishes a lens through which the audience sees, understands, and interprets the work - the overarching WHAT and WHY of the research. The audience should be able to focus on the potential success of the candidate’s work over the long term, rather than find themselves critiquing disparate parts in the short term.

Discovering and defining a connection between each project, experiment, investigation, and/or body of work proves the research’s fecundity via a deeply rooted theme, regardless of whether each individual project is ultimately successful, or even fully resolved.

Our expertise in this area comes from our current roles as junior faculty members and interdisciplinary creatives. Kimmie, entering her second year in the tenure process, is continuing to refine her through-line. She is planning, making, evaluating, and revising what forms of research and dissemination are appropriate to her through-line as she builds her CV by applying for opportunities such as grants, residencies, writing opportunities, client work, conferences, and the like. Meaghan, entering her sixth and final year in the tenure process, is perfecting, polishing, and justifying her through-line to present for promotion. We represent both ends of the Assistant Professor experience as well as the role of creative practitioner, and see an opportunity for mentoring in terms of how to discuss and present design work and research. It is common in the realm of both academia and design to discuss, share, and receive feedback from colleagues, peers, and mentors on individual projects, investigations, and writing samples. However, it is rare to
Upon completion of this workshop, participants will be able to:

- identify and articulate the “through-line” of their interdisciplinary work and research
- identify and articulate their niche within the fields of design and design education
- identify and articulate what makes them an expert within these fields
- evaluate the effectiveness of other participants’ concise narrative arc and, consequently, improve their own

This session will last 1 hour 20 minutes, with the majority of the time focused on guided, hands-on activities.

- Introduction/Lecture/Dialogue (15 minutes)
- Research Mapping Exercise with Partner (15 minutes)
- Concise Narrative Arc Practice with Group Critique (35 minutes)
- Presentation of strategies for continuing the process beyond the workshop (10 minutes)
- Wrap Up Discussion (5 minutes)

» Strategy and Objectives

SESSION GOAL

“Finding and Leveraging Your Through-Line” is geared towards interdisciplinary practitioners and educators seeking to holistically articulate the scope of their creative work and affirm their chosen dissemination methods. This workshop will help participants develop a narrative arc that substantiates the multi-faceted nature of their research, along with a formula to articulate this agenda concisely in two sentences or less. New perspectives on personal research agendas will be discovered through guided, hands-on activities and sharing with other participants. For example, a paired exercise will have participants use a visual mapping technique to evaluate their recent research and creative activity. Participants will then share their research maps with a partner, together discovering connections within seemingly disparate projects, experiments and ideas—and broadening the definition of design research. By practicing the articulation of their research agenda, participants will gain experience, clarity, and confidence. Opportunities for future collaborations between participants with shared research interests will arise through open dialogue. The workshop will conclude with an invitation to continue the conversation after the conference in the form of additional at-home exercises and an online participant forum, as well as suggestions for how to most effectively utilize one’s newly defined through line.

With a clear, macro-view of one’s work, making and other forms of research and their dissemination gain purpose. It is easy to ignore this necessary exercise of finding the narrative arc in favor of activities that provide more immediate gratification, such as making. Although the definition of research varies from institution to institution, person to person, by connecting with peers in the field we will better understand our own personal research within the larger cannon. “Finding and Leveraging Your Through-Line” provides a forum in which interdisciplinary methods beyond writing and publication become part of the definition of research, and participants conquer the important and efficient stepping stone of defining their own through-line.
EXPECTED OUTCOMES
Upon completion of this workshop, participants will be able to:
• identify and articulate the “through-line” of their interdisciplinary work and research
• identify and articulate their niche within the fields of design and design education
• identify and articulate what makes them an expert within these fields
• evaluate the effectiveness of other participants’ concise narrative arc and, consequently, improve their own

STRATEGY
This workshop will help participants develop a narrative arc that substantiates the multi-faceted nature of their research, along with a formula to articulate this agenda concisely in two sentences or less. New perspectives on personal research agendas will be discovered through guided, hands-on activities and sharing with other participants. For example, a paired exercise will have participants use a visual mapping technique to evaluate their recent research and creative activity. Participants will then share their research maps with a partner, together discovering connections within seemingly disparate projects, experiments and ideas—and broadening the definition of design research. By practicing the articulation of their research agenda, participants will gain experience, clarity, and confidence. Opportunities for future collaborations between participants with shared research interests will arise through open dialogue. The workshop will conclude with an invitation to continue the conversation after the conference in the form of additional at-home exercises and an online participant forum, as well as suggestions for how to most effectively utilize one’s newly defined through-line.

» Timeline & Guidelines

TIMELINE
SESSION START (on the hour or half-hour)
This session will last 1 hour 20 minutes, with the majority of the time focused on guided, hands-on activities.
• Introduction/Lecture/Dialogue (15 minutes, led by Facilitators)
• Research Mapping Exercise for with Partner (15 minutes, for Participants)
• Concise Narrative Arc Practice with Group Critique (35 minutes, Facilitators and Participants)
• Presentation of strategies for continuing the process beyond the workshop (10 minutes, led by Facilitators)
• Wrap Up Discussion (5 minutes, Facilitators and Participants)

SESSION END
Facilitators will ask Participants if they can photograph / scan their research mapping exercises and concise narrative arc practice documentation to use as evidence in the final written submission.
Working from the outside in: Using “The Big Three” investigative phenomena to situate and frame research endeavors informed by design

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Keywords
Investigative phenomena, initiating design research, locating design research, research framing, situating scholarship, research methodologies, broader impacts

INTRODUCING THE “BIG THREE” INVESTIGATIVE PHENOMENA

The facilitators of this workshop — each having accrued years of experience formulating, practicing and teaching about design and research — contend that thoughtful ways of thinking, making and doing informed by rigorous investigative processes (i.e., research) can be enriched and sharpened if such endeavors are situated within the larger, cumulative landscape of design research past and present. This form of contextualization can provide a particular vantage point from which to assess and/or situate one’s own research agenda in relation to established investigative landmarks or theoretical vistas. One such situating schema of many involves assessing personal research trajectories in light of three broad yet distinct approaches informing and/or shaping many investigations within design research past and present. They are:

• Approaches rooted in research that investigate and interrogate designers or the(ir) process(es) of designing;¹
• Approaches rooted in research that investigate and interrogate artifacts, experiences, systems, networks, environments and communities as outcomes of design that constitute the artificial world;²
• Approaches rooted in research that investigate and interrogate how and why those who are affected by the decisions of designers and their collaborators are affected as they are.³

Each of these approaches can serve as a distinct means to help define and frame research that informs design decision-making, and how design affects and is affected by a diverse array of social, technological, environmental, economic and political factors and conditions. Moreover, understanding and then working within, or in response to, or in departure from these three approaches can benefit novice and seasoned designers and researchers alike. Each of them provides distinct ways to

1) perceive and describe research circumstances and then
2) formulate and operate particular research methodologies and the more specific methods that emerge from these circumstances.

Participants in this workshop will emerge from it having constructed the abilities and sensibilities necessary to effectively situate a variety of inquiries and examinations in one or more of these three particular loci of investigative phenomena. In turn, this will enable them to more adequately identify viable opportunities to formulate and design research endeavors that yield new “useful, usable and desirable knowledge,”⁴ and that have the potential to positively affect change across or within a broad spectrum of arenas. At the larger end of the societal scale, these include but are not limited to public policy initiatives, socio-cultural awareness campaigns, economic stimulus actions at micro- and macro scales, and the invention and implementation of adaptive, resilient technology systems that improve lived experiences.

(Insert Figure 1. Here)

At the smaller end of this scale, these include but are not limited to constructing the knowledge necessary to design more effectively and efficiently such artifacts as operable apps, interface designs, and web-based systems targeted for use by specific populations, or online and printed instruction manuals that articulate procedures for operating or maintaining mechanical or digital devices. This scale also includes digitally facilitated advertising or other visual messaging campaigns that are designed to tailor
content delivery based on active input from consumers, which allows them some measure of control over the quality of their experiences. Additionally, it includes an ever-increasing amalgam of data-aware devices that read and learn from our behavior, and that allow us to collaborate to develop ideas and share power.

HOW “WORKING FROM THE OUTSIDE IN...” WILL BE STRUCTURED (AND WHAT YOU’LL LEARN BY PARTICIPATING IN IT WITH US)

The three-hour span of time devoted to the facilitation of this workshop will be subdivided into a brief 15-minute introduction, three 40-minute work sessions, a 5-minute break, and a 25-minute concluding individual and/or group report out session. Individual participants are strongly encouraged to bring information into the workshop that is pertinent to a research project or agenda they are either already working on or would like to explore. This information should briefly articulate and qualify:

- why whatever it is they are investigating/examining is significant, in terms of what types of knowledge or understandings it will enable or yield, and why people inside and outside the world of design might be interested in and derive benefit from their research;

**Figure 1.** The focus of this workshop will involve situating and locating research informed by design, which occurs in and around the “Proposal” phase depicted in this diagram created by co-facilitator Keith Owens. The diagram in total depicts a research process informed by design, which invites comparisons to other models for formulating and engaging in research that are not informed by design.
• with regard to research methodologies or methods, why they have decided to design their research endeavor (or is thinking about doing this) as they have;
• what types of broader impacts and affects whatever they are investigating/examining will or could have (e.g., how something is thought about or made or distributed; how a procedure or making process is planned and operationalized; how the knowledge that is created could possibly change understandings or perceptions of a given set of circumstances or situations).

The information called for in this bulleted list should not require any more physical space to describe than can be reasonably handwritten or typeset onto a 5” x 3” index card.

Each 40 minute module will allow groups of four to five to engage in a dynamic, diagrammatic-mapping process orchestrated by the facilitators. During each module, group participants will be tasked with locating their respective research endeavors (paradigmatically, theoretically, methodologically, potential impact(s), etc.) relative to one of the three possible approaches to design research phenomena. At the completion of all three modules, individuals should be able to situate and locate their particular research endeavors — within, alongside, outside of, or elsewhere — in relation to all three approaches. Even if their particular research agenda is not closely aligned with one or more of the three approaches, or any of them, participants are encouraged to think of their engagements in and contributions to each module as a means to gain familiarity with a new type of research framing and initiation toolkit, or with a new research project identification platform.

The objective of having participants engage in the activities that will comprise each of the three modules is to help them consider and make informed choices about:

1) Where is or where could my current research be situated with regard to the extant scholarship/research endeavors of others?
2) What factors, conditions, actors and issues should I account for in the design of my research and why?
3) What specific paradigmatic and/or theoretical frameworks that inform, or could or should inform, their specific research endeavors;
4) What particular, method-based or situational variables they should consider/weigh carefully, and which they should ignore;
5) How what they have begun to operate or plan to operate should be oriented to either recognize and analyze patterns of behavior or anomalies as key indicators of causation, affect or change;
6) Which methodology and method(s) are most appropriate to guide the progress of their particular research endeavor so that the data-cum-information it yields is useful and usable;
7) How best to articulate realistic expectations that should or should not guide the generalizability of their research endeavor;
8) How to most effectively make use of secondary research as either a scaffolding upon which to construct knowledge, or an opportunity to identify where “holes” exist in current knowledge.

The workshop will culminate with an opportunity for individual participants and/or groups to synoptically report their findings to the entire gathering. This process will allow individuals to “short report” key findings about where and why they have located potential or ongoing research endeavors as they have as their participation in the workshop progressed. It is the intent of the facilitators to video-capture footage from at least these “short report” sessions—if not more broadly from each of the modules—and edit this into a short (i.e., 10 to 15-minute) video that can be shared with all Decipher participants and through the AIGA Design Educators’ Community (DEC) Online Project Repository.

END-NOTES

Session Goals

The goals of this workshop are:

1) To expose participants to a phenomena-driven research approach contextualization and framing process.

2) To enable participants to situate (or not) their respective research trajectories or projects in relation to one or more of three design research approaches investigating: the design(er) and their processes, the designed artifact and its impacts, the design user and the impact of the consumption of design(ing) on them and their reality.

3) To encourage participants to use this particular process as a means to contextualize, sharpen and deepen their research knowledge and skills.

SESSION EXPECTED OUTCOMES

1) Participants in this workshop will emerge from it having a better understanding of how to situate their respective research trajectories in relation to one or more of three particular loci of investigative phenomena: the design(er), the designed artifact, the design user.

2) In turn, this understanding can function as a departure point from which participants can more effectively identify viable research endeavors that can potentially yield new “useful, usable and desirable knowledge,” and that may have the capacity to positively affect change across or within a broad spectrum of arenas large and small.

3) The end of workshop individual or small group report outs will function as a.) indicators of the efficacy of the workshop’s approach, and b.) whether of if any of the participants derived new insights or better understanding of phenomena-driven research contextualization and framing.

STRATEGY

1) The workshop approach encompasses presentation of concepts, hands on work sessions employing a diagrammatic mapping process, reflection and knowledge sharing through brief but synoptic report outs.

2) This workshop falls under the conference theme: Defining Design Research

3) Participants will have the opportunity to engage with workshop materials through listening, note taking, experiential visualization, self and group-reflection and verbal-visual presentation.

REFERENCES


4) The planned workshop cadence and structure is aligned with the time frame allotted for this particular workshop. Decipher Session Timeline & Guidelines

**TIMELINE**

1:30 SESSION STARTS (on the hour or half-hour)

1:30 - 1:45 Session introduction/structure, working Owens processes, outcomes. Etc. Topic introduction

1:45 - 2:20 Work Session 1 Owens/Facilitation Participants/collaborative engagement

2:20 - 3:00 Work Session 2 Owens/Facilitation Participants/collaborative engagement

3:00 - 3:40 Work Session 3 Owens/Facilitation Participants/collaborative engagement

3:40 - 3:45 Workshop Break All

3:45 - 4:20 Individual and Small Group Report Outs Owens/Facilitation Participants/Information presentations & discussion

4:20 SESSION ENDS

**GUIDELINES**

1) Workshop is structured as an experiential, hands-on engagement with facilitated small group activity, discussion, reflection and report outs.

2) Open minded collaboration and idea sharing is expected of all participants

3) Participants are expected to bring information about their respective research project or agendas — ones they are either already working on or would like to explore.

4) This information should very briefly articulate and qualify:
   a) **why** whatever it is they are investigating/examining is significant, in terms of what types of knowledge or understandings it will enable or yield, and why people inside and outside the world of design might be interested in and derive benefit from their research;
   b) **how** they have decided to design their research methodology or methods (or are thinking about doing this) as they have;
   c) **what types of broader impacts and affects** whatever they are investigating could have (e.g., how something is thought about or made or distributed; how a procedure or making process is planned and operationalized; how the knowledge that is created could possibly change understandings or perceptions of a given set of circumstances or situations).

5) Participants are expected to be able to synopsize and report our their insights and discoveries in a direct and timely manner.

6) Participants are encouraged to use the insights and discoveries gained at the workshop as departure points for the consideration of other conference activities and discussions with other conference attendees.
We are not alone: navigating design research and writing challenges with group support

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Keywords
Design Research, Writing Practice, Research Support, Accountability, Writing Groups, Writing Logs

TOPIC DESCRIPTION
For design educators in higher education—who are primarily trained as creatives—the emergent nature of design research, paired with the lack of (or limited) training in academic writing and research methods, make the actual practice of design research difficult. Despite these challenges, utilizing institutional resources and establishing support networks with other academics can provide the necessary support for overcoming barriers. We therefore propose a conversation that dissects the challenges of scholarly practice for design educators by sharing our collective experience participating in a virtual writing group over the Fall 2017–Spring 2018 academic year.

Due to the collaborative nature of design, design faculty often engage in multidisciplinary research and writing and turn to research methods employed in the humanities and social sciences. Terminal MFA and MDes programs are increasingly cross-listing research methods courses from other disciplines or developing their own, however, specialization in design research is not broadly available and the subject area varies widely in content and approach from program to program. Because of this, there may be specific standards and processes inherent to academic publishing to which design educators may not have been exposed to in their education. As a result, design educators entering teaching positions in higher ed with research requirements must become practitioners while simultaneously learning investigative methods and procedures.

Additionally, the limited number of academic journals within the design field impedes options for dissemination of ideas and adds to the basic challenges of conducting research without early training in qualitative and quantitative research methods. The minimal number of journals subsequently increases competition for publication, pitting newer and less experienced researchers against scholarly writers who have received PhDs. With a potential lack of training, design educators engaged in scholarly research are largely left to their own devices when developing research trajectories. The expectation that individuals independently pursue publication—which includes determining the highest caliber and best-matched journals for research topics—stands in contrast to examples modeled by faculty in other academic fields. Complicating matters even further, senior design faculty who have earned tenure based on creative activities and endeavors, such as exhibitions and design awards, may only be able to provide limited mentorship to junior faculty pursuing academic writing.

Efforts by the AIGA Design Educators Community and the College Art Association to establish standards that speak to the evolving, multidisciplinary nature of design—as well as translate it for the benefit of other disciplines—have played an important role. Academic institutions are expanding their definition of scholarly research for faculty in creative fields, benefitting design educators by encompassing a wider spectrum of scholarly and creative trajectories. Yet narrower avenues to disseminate the work remain. And though some departments may have guidelines for tenure and promotion that include scholarly publication in the field of design, how departments recognize or weight scholarly artifacts specifically for design varies from institution to institution.

While the scholarship of design research may be less established compared to the humanities or social sciences, design educators in higher ed share similar challenges when
pursuing self-directed work and balancing service, teaching, and research requirements. In addition to discussing the obstacles that can hinder progress in pursuing academic publishing, our conversation topic addresses solutions for developing structure and support. For the past seven months our panel has been engaged in a weekly virtual writing group—comprised of design academics from both large and small institutions—which has jumpstarted productivity and established accountability. From utilizing Wendy Laura Belcher’s book How to Write Your Journal Article in 12 Weeks to shared writing logs and research plans, we have created a strong support network that fosters personal accountability and has become a place to share updates, get feedback, and incubate ideas. We’ve accumulated a number of valuable resources, activities, and insights that we plan to discuss with the conversation group.

Our focus on design scholars (and design research) directly responds to the specific need for support that exists within the design community. Though we are primarily speaking to students and faculty along the academic spectrum engaging in research in design or design-related fields, however, we also seek to promote multidisciplinary writing groups. Beyond collecting and sharing resources and strategies, moreover, our intended outcomes include connecting participants interested in forming their own writing groups and offering suggestions for how to structure them, and ensuring that participants leave the conversation with concrete commitments for moving forward.

REFERENCES


» Strategy and Objectives

STRATEGY

Participants will hear a short introduction from the panel of design educators about the purpose and structure of the session. During the conference presentation, participants will dialogue in small groups about their writing practices. Attendees who have opted in to the collection of data will then answer a series of questions related to their writing practices anonymously via direct-response technology. These responses will be shared in the session and will be used to prompt further conversations within the small groups. At the conclusion of the session, an anonymous two-question paper survey will be distributed for completion and then collected. After the conference, participants who have opted to participate in the data collection will be emailed an anonymous online survey for completion.

- This session is focused on challenges of writing for design research
  » We will look barriers that impede scholarly practice in design research,
  » We will examine ways in which design faculty are currently navigating the transition from creative design practice into research and writing; and
  » We will offer potential solutions for developing structure to support scholarly research and writing for design
- We will present the content in a variety of learning methods, including visual (slides), discussion, and handouts to address multiple learning styles. Through polling during the workshop we will identify the levels and needs of the group and will develop prompts based on the needs of the group as a whole.

Working virtually as a group, we have established a solid strategy to prepare for the workshop, dividing up tasks, and tightening our presentation. During the actual workshop we will facilitate conversations among attendees, provide resources for participants to look into after the session, and for those interested, will encourage continued engagement and dialogue after the session about forming writing groups with other attendees.
Timeline & Guidelines

SESSION START

Brief introduction (15 minutes)
- Introduce consent form and have participants sign or opt out of being included in the study (we’ll hand these out to participants as they roll in)
- Individual introductions (Name, institution, areas of research)
- Share our experiences (We’ll each briefly share our reasons for joining a writing group)
  » In addition, we’ll share general contextual background information about our writing group and discuss challenges we’ve face and/or observed in academic research and writing

Interactive Group Activities (30 minutes)
- Writing/Reflection:
  » Participants spend a few minutes thinking and jotting down some obstacles they’ve faced when it comes to writing.
- Clicker questions:
  » We’ll project a few questions on the screen: participants respond using clickers (or an interactive app), responses are seen in real time.
  » Group discussion questions are chosen based on clicker question responses
- Small Group Discussions:
  Depending on number of participants/small groups, we’ll have a facilitator at each table to help observe and guide the discussion.
  » What kind of challenges and successes have you experiencing around writing? (Reference your notes from earlier)
  » What kinds of strategies have you used to achieve success?
- Group share out and questions
  A representative from each group will share some responses from the small group discussions

Action items (15 minutes)
Facilitators will share various resources: how to form a writing group, strategies to craft a research/writing plan
- How to form writing groups
  » Recommended number of group members
  » Shared goals: what writing projects is everyone working on/towards?
  » Regular meeting time—weekly? Bi-weekly? Be honest about what you can commit to.
  » Working from some kind of structure
    — Recommendations from other writing programs
    — Belcher’s 12 week Journal writing structure
    — Writing logs
  » Accountability
    — Writing commitments
    — Bi-laws?
- Share resource handout
- Hand out paper survey
- Invite participants to drop cards in jars to facilitate writing group connections

SESSION END
[Last 10–15 minutes before start of next session: create quick flip-chart recaps]
IBM Incubator: Teaching, Doing and Disseminating Design Research

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Senior Design Lead at IBM

Keywords
IBM, design thinking, design research, ux design, user-centered design, design at scale, training

“Sometimes you go off and do your research and you find something unexpected… your user is telling us something completely different.” – Brad Neal, IBM Incubator Lead

THE INCUBATOR PROGRAM AT IBM

Beginning in 2012, IBM began a massive reinvestment in design to drive the development of more user-centered products and services. During the next 3.5 years, the number of designers at IBM grew from about 200 to 1600. Two-thirds of them came directly from universities. An education system was conceived to enable these early professionals and to equip them for success in an infinitely-complex company (The Loop: IBM Design Documentary, 2018).

Design research is a fundamental piece of the success story for IBM’s transformation toward becoming a more design-led company. Relevant to the Decipher conference theme, IBM Design Incubator – an essential capstone project within the bootcamp training program for designers and product managers – drives the teaching, doing, and dissemination of design research at scale for IBM. Infused with fresh research insights, teams are able to reframe the complex problems they are given and deliver empathetic, compelling and sometimes surprising outcomes for project sponsors.

At IBM “Playbacks” are presentations for stakeholders with a focus on the user. They are an important point of alignment for teams [IBM, 2018]. Each Incubator project concludes with a Playback that delivers a user story, business case, and prototype. This deliverable is considered the handoff. Where the Incubator project concludes and the sponsoring team work begins making the vision a reality with more robust engineering teams at their disposal.

The IBM Incubator should be of interest to design educators who want to take an active role in evolving their curriculum to meet the demands of a changing industry. Central to the success of the IBM Incubator model are these key concepts:

1) Radical collaboration: teams of diverse individuals from design, business, and technology backgrounds is essential for driving innovation on complex problems.
2) Beginners mindset: the lack of experience designers have in a particular domain is an advantage rather than an inhibitor to success because it helps teams examine the problem in a new way.

3) Fresh design research insights from primary user research are at the center of every successful outcome.

The Incubator provides an experience for early professionals that exemplifies the “complexity” and “resilient organizations” trends as described in *AIGA Designer 2025: Why Design Education Should Pay Attention To Trends* (AIGA, 2017). Complexity is found in both the technical and industrial domains in which projects are situated. For example, sponsored projects may include technologies such as cloud computing, blockchain, data analytics, security, artificial intelligence and quantum computing. They might touch industries including healthcare, logistics, finance, education, government, energy, and retail. The combination might look like “leveraging blockchain technology in the transportation industry,” or “predictive analytics to mitigate global disease outbreaks.”

By challenging new hires with these deeply complex problems, IBM is investing in a massive transformation (“resilient organizations”) for both IBM and their clients’ businesses. The Incubator projects challenge new hires to define and design the path the company should take through its products by envisioning “Version X,” or the ideal user experience. This many times might mean a pivot for an existing product, which challenges assumptions that the sponsoring team held going in. Another layer of complexity then becomes the communication of these new ideas successfully to project sponsors.

**TEACHING DESIGN RESEARCH**

IBMers are always challenged to think at scale. The scale imperative drove the development of IBM Design Thinking and the practices that define it. For design research this means a codified set of resources that are useful for anyone, but critical for the success of the new hire to have at their fingertips (IBM, 2018).

Program leaders consistently observe that the skills, abilities, and experience of design researchers entering IBM are more unpredictable and varied compared to their colleagues from other disciplines. Getting design researchers up to speed on the methodologies contained in IBM’s way of working is an essential component of enabling them for success.

One way new hires get up to speed is through talks and workshops that more experienced colleagues hold in the studio with the new hire groups during the bootcamp experience. The visibility and access to experienced staff helps new hires build their internal networks and know who to reach out to for mentorship.

**DOING DESIGN RESEARCH**

The Incubator project is the new-hire designers’ first opportunity to put their learnings into practice – with real accountability for the outcome. Design researchers manage the relationship with external users for the duration of the project. They typically lead the interview sessions with users, and take on the responsibility of synthesizing insights from a number of touch points with multiple users. Deep understanding gained in the process drives the development of empathy for the user, desire to solve the pain points they discover, and ultimately arrive at a differentiated vision for the product.

The following case studies from the Incubator – three projects out of roughly 100 that have been executed to date –
will highlight the role of design research as fundamental to its successful outcome. Each will also validate the assertion that the trends of complexity and resilient organizations are very real at IBM, and that early professional designers need to engage in more experiences like these to prepare them for continued success moving forward.

**PROJECT “OPTIMUS” – TRANSFORMING THE TRUCKING INDUSTRY**

The founder and CEO of a startup called “Truck Trust” came to the IBM Incubator with a mission to transform an industry wrought with mistrust and pain points throughout the entire logistics chain. His company had invested in an IBM mainframe server, and his vision included the use of Blockchain technology to create a secure and transparent platform that once adopted will have the power to improve the jobs and lives of the many different workers including brokers, dispatchers, and the truck drivers themselves.

In this short 4 week project, the team immersed themselves in an industry completely unknown to any of them beforehand. The sponsor was very hands-on with the team, and spent days communicating his deep knowledge, and introducing the team to external users. The team reflected

As of this writing, Truck Trust is invested in moving forward with an IBM Blockchain solution that has the potential to transform an entire industry. Design thinking and user-centered influence on this project was key to this success (Shrayber, 2017).

**PROJECT “ERLENMEYER” – COGNITIVE SEARCH PLATFORM FOR MATERIAL SCIENCE RESEARCH**

IBM project sponsors came to the Incubator with a foundational technology in hand, and a hypothesis that their cognitive engine could be a very powerful tool to assist scientific researchers with their work. What they didn’t have was the capability within their own team of developers to conceive of a user experience that would bring it together in an elegant and delightful way. That is what the Erlenmeyer team did in 11 weeks.

With the goal to “Streamline Chemical Researchers’ efforts to develop new compounds for inorganic chemical..."
manufacturing and material science,” they were set off on their mission.

The team conducted 8 co-creation sessions with 6 users to deeply immerse themselves in discovery. They made sense of a deeply complex domain, an advanced existing AI technology, and the culture of a user that was largely unfamiliar to any of them.

The story that the team brought to life through their project included an ecosystem of personas known as Kelvin the researcher, his colleague Fahren, their research director Dr. Bonds, Devin the simulation engineer, and the resident data scientist Big Dada. The team highlighted key pain points for the professional scientific community: researchers are limited by traditional input/output search systems limiting hypothesis exploration; simple keyword searches are superficial and time consuming; and there is a lack of visibility into previous research efforts within the same organization making redundant work all too common.

As a project with a longer duration, this team was able to conduct both formative and evaluative research, iterate numerous times on their prototype, and deliver a highly successful outcome for their sponsors. The project received so much positive attention that a small subset of the team (including the design researcher) was brought to IBM corporate headquarters in January of 2018 to deliver a condensed version of their playback to IBM’s CEO and her Technology Team – including the top Vice Presidents in the company. The outcome of that meeting was a resounding vote of confidence for design as a driver of excellent user experience.

CASE STUDY: PROJECT “MONOCLE” – POWER SYSTEMS

Power Systems is one of IBM’s core legacy businesses. The end users of the technology are information technology systems administrators and managers who oversee massive server facilities. The sponsoring team came to the Incubator with a prescriptive solution: the design team should create a “single-click update” for these users. After 30 interviews with users that told a completely different story about what they needed, the problem was completely reframed. In reality, the idea of a “single-click” update was terrifying to an administrator who is responsible for managing systems at this scale. What they want is control, visibility, and confidence when performing updates to their systems.

The team was able to design and prototype a new experience based on real design research insights, leading to a completely different outcome than the sponsor expected. Carl Burnett, a Distinguished Engineer in the IBM Systems development group who was initially skeptical of the design process – and an advocate for the single-click update – said this at the end of the project:

“Engaging our stakeholders at the beginning instead of the end allowed us to get at the true pain points. You could feel the emotion from these users coming off the comments and quotes. It was really powerful” (Internal IBM documentation, 2017).

Project Monocle is a perfect example of how user research can change the course of a project by determining what the user actually needs, not what people assume they need. It also demonstrates the business value of design and design research.

ADDRESSING ANTIPATTERNS

Experience running dozens of Incubator projects taught program leaders the necessary ingredients for success. An important skill program leaders developed was how to
source, vet and evaluate projects and sponsoring teams. The program is obligated to drive great outcomes for the business and great experiences for participants. However, out of the dozens of Incubator projects seen start to finish, some inevitably turn out less than ideal. For example, instead of “Version X” – or the blue-sky vision – the team presents a “Version Next.” This can happen when the team avoids risk-taking. For example, the project team may allow themselves to be heavily influenced by sponsors who don’t understand the aim of the program. In this case the sponsors might be more interested in the program as a design resource to accomplish their near-term goals than envisioning a more innovative experience.

Many times, the project team does all the right things and presents a compelling Version X that is met with praise from their sponsors. The disappointment happens when upon follow-up program leaders find that no action is being taken to implement the vision. A real “outcome” is when the sponsors move forward with the vision, not just when it is communicated at the Final Playback. Occasionally a major pivot very late in the process makes it difficult for the team to achieve newly-framed goals. They may not have access to the right users, and no time is left for them to act. This is sometimes indicative of what is called a “stop the bus” outcome, meaning the original user identified was very far off-base from what user research indicates is the case. It can be uncomfortable, and less than ideal for the project team, but is not ultimately considered a failure because knowing what not to pour resources into is equally as important as the reverse.

DISSEMINATING DESIGN RESEARCH

Knowledge transfer for Incubator projects takes place weekly throughout the project in order for the team to highlight key findings and get feedback from their sponsors on the work. At the conclusion of the project, the Final Playback tells the full story – end to end – including a demo of the design solution or prototype. At this milestone Playback, powerful insights are often delivered in the form of direct quotes from users. Whether they express a pain point with an existing product, or a desire for what would make their jobs easier, executive stakeholders perk up when they hear directly from the mouths of their users. This groundwork provides the necessary buy-in for stakeholders to embrace a radical design departure from where their product might be currently.

Another way to think of “dissemination” is through the corporate culture. As IBM makes its transformation toward a “sustainable culture of design and design thinking,” the influx of early-career designers will be a key ingredient. As they are deployed from bootcamp into the company, the experiences, ideals, and skills gained there go with them.

CONCLUSION

The IBM Incubator is making a direct contribution to transforming IBM as a company. For any business, business results are where value is placed. Without them, design and design thinking is unimportant to the company. Continuing to demonstrate the contribution design makes to those results is therefore critical, and IBM is making progress in that regard.

A 2018 study on the impact of IBM’s design thinking practice concluded that “Organizations slashed the time required for
initial design and alignment by 75%,” and “Project teams leveraged better designs and user understanding to reduce development and testing time by 33%.” (Forrester, The Total Economic Impact of IBM’s Design Thinking Practice”) This is good news for IBM, and for the academic community who wants to see growth in employment opportunities for their students upon graduation.

For IBM, the Incubator is working well to drive business outcomes, train new designers, and ultimately move toward a sustainable culture of design thinking. Components of the IBM Incubator model might be leveraged in the classroom to prepare students for success working in large organizations or on projects that are complex in nature, which AIGA is predicting to be the new normal for the design practice.

But can more be done and can it be done better? The academic design community might consider the following questions for discussion among each other and industry professionals. How might the community:

- Better prepare designers for success when working on large complex problems or within large enterprises?
- Enable early professional design researchers to embrace complexity, and use it to their advantage?
- Break down barriers (real or perceived) in organizations to enable more radical collaboration (multidisciplinary work)? What are some big ideas that can address this?
- Share with each other (across academia and industry) successes and challenges and models for running business-sponsored projects?

REFERENCES


» Strategy and Objectives

SESSION GOAL

The goal of this session is to inspire an exchange of ideas that are relevant for both academia and industry in facilitating early-career designer success in the context of large, complex organizations.

Design research efforts on Incubator projects are key to the project’s success or failure. They set up the project for success by helping the whole team unravel the complexity of the problem, and the unfamiliar domain. They provide fresh/new insights that inspire the team with new ways to think about the solution. These types of projects prepare them for handling their roles within the business better.

Questions I would like participants to consider after my talk are:

How might the community:

- Better prepare designers for success when working on large complex problems or within large enterprises?
- Enable early professional design researchers to embrace complexity, and use it to their advantage?
- Break down barriers (real or perceived) in organizations to enable more radical collaboration (multidisciplinary work)?
- Share with each other (across academia and industry) successes and challenges and models for running business-sponsored projects?

EXPECTED OUTCOMES

The outcome I hope to achieve for this session is to capture and synthesize ideas inspired by the questions in order
to make it consumable for a broader audience of design educators and industry professionals down the road.

I will assess success based on the level of engagement by participants during the activity portion of the program, and their willingness to engage in a dialog with their peers to generate new ideas.

**STRATEGY**

I will engage the participants with a short talk about the IBM Incubator program that focuses on the radical collaboration model, and provides some example outcomes. I will then use the remaining time for a discussion activity in which participants will break into smaller groups (of 5-6 – format is flexible) to respond to the questions. Then I would like the small groups to spend 10 min to share out with each other the synthesis of their group’s ideas.

How might the community:

- Better prepare designers for success when working on large complex problems or within large enterprises?
- Enable early professional design researchers to embrace complexity, and use it to their advantage?
- Break down barriers (real or perceived) in organizations to enable more radical collaboration (multidisciplinary work)? What are some big ideas that can address this?
- Share with each other (across academia and industry) successes and challenges and models for running business-sponsored projects?

To make the contents of my talk accessible to people with different abilities, I will make make some printed packets available for those who prefer that format, and offer them before the talk. I will also create a pdf for digital distribution upon request for use by digital screen reader for users with blindness or low vision. I can make these materials available in-advance of the talk if needed.

I think my strategy is feasible given the allotted time. I am willing/able to pivot if we run short on time.

» **Timeline & Guidelines**

**TIMELINE**

SESSION START – 1:30pm (on the hour or half-hour)

1:30 – 1:45 Talk: IBM Incubator: Teaching, Doing and Disseminating Design Research

1:45 – 2:00 Prompt/questions for discussion, session attendees individually make their own notes/responses to questions and discuss within small groups. Cluster like responses thematically.

2:00 – 2:10 Attendees playback/share-out activity outcomes to each other or the whole group (depending on number of participants)

2:10 – 2:20 Flip-chart recap
Expanding the Discourse: Future Practices in Scholarly Publishing

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Keywords
academic publishing, design, future publishing, knowledge production, scholarly journals, digital scholarship

What does the future of published scholarship look like? Design research practices include a range of activities: archival research, interviews, data collection, visual analysis and observation, and exploratory / critical making. Publication and dissemination of these varied practices takes on many traditional and non-traditional formats: from peer-reviewed articles in academic journals to self-authored publications and experimental venues. The ways these practices are recognized by tenure review committees, peers, and by scholars in other disciplines informs the perceived value of those venues. This is worthy of discussion as design students (both undergraduate and graduate), faculty, and researchers explore and expand new avenues for understanding how design research can be disseminated across disciplines.

In our collaborative design research practice, we are exploring the historical, contemporary, and future role of design in scholarly journals. As scholarly production embraces the digital, new implications arise for the publication, interactivity, and reading experiences of academic research. Publication format and authored content can influence the perceived identity of the research itself, the author, the journal or organization, and the publisher. Through digital publication, scholarship gains the features of keyword searches, citation, and annotation. This raises opportunities and concerns that will benefit from discussion: In what ways does the templatization or customization of digitally interactive publications mediate our experiences? What kind of visual information is lost through aggregation within digital databases and what is gained? How might these questions surrounding digital scholarship impact access to and engagement with design research?

Academic journals are generally categorized as periodicals, however, studying their design remains outside other established historical research of publishing practices. As physical objects, books are revered and collectible; newspapers and magazines are often broadly consumed and disposable with more public appeal through visually enticing design. Journals are produced by, and for, scholars as archives of knowledge and are considered currency within academic culture. Subscriptions and digital collections are often held by institutions rather than individuals, with an emphasis on the access to journal content in databases rather than the preservation of the physical object. While innovations in scholarly digital publishing of scholarly journals do exist, there is limited analysis of their design. For these utilitarian academic objects, it is their “utter usefulness” (Twemlow, 2017, p. 9) that makes them worthy of design criticism and research.
As discussed in the AIGA Designer 2025 report, design research will continue to be an integral part of design practice and related fields. How this research is disseminated and interpreted is a vital component of its impact and value. This conversation offers an opportunity to discuss how these approaches can maintain “academic rigor” while supporting radical and diverse perspectives and outcomes that help communicate the value of publishing design research and the design of published research. With the goal of encouraging “practitioner-researchers and design thinking researchers to consider the role that design has to play in the generation and representation of knowledge” (Burdick and Willis, 2011, p. 553), we will begin by examining several case studies of historical and contemporary publishing practices both within design and in other academic fields. Next, we will discuss and share contemporary and future-oriented publishing models and publications, both digital and print, that challenge traditional forms and expand discourse. We will end the session by working with participants to generate some new ideas regarding opportunities, challenges and speculative futures for scholarly publishing in design and beyond.

REFERENCES

» Strategy and Objectives

SESSION GOAL
Discussion and next steps on how we might maintain “academic rigor” while supporting radical and diverse perspectives and outcomes that help communicate the value of publishing design research and the design of published research. Questions:

• In what ways does the templatization or customization of digitally interactive publications mediate our experiences?
• What kind of visual information is lost through aggregation within digital databases and what is gained?
• How might these questions surrounding digital scholarship impact access to and engagement with design research?

EXPECTED OUTCOMES
• The group will generate new ideas regarding potential and speculative futures for scholarly publishing in design and beyond.
• Connect with peers, expand networks, and share resources.
• Session participants interested in continuing the conversation will leave the session with actionable plans for future discussions.
• Planning a zine / radical publication (digital or physical) based on discussion

STRATEGY
We will be breaking into smaller groups to facilitate engaged discussion with participants.

Our session will address issues surrounding the dissemination of design research, specifically in the publication of scholarly journals. We welcome participants with a wide range of experiences and expertises, including graduate students and emerging scholars.

» Timeline & Guidelines

TIMELINE
SESSION START
2:30pm: Introductions, brief presentation by facilitators (visual examples and case studies).
2:45pm: Participant breakout focus groups (challenges, opportunities, possibilities)
3:00pm: Participants share notes from each focus group
3:15pm: Wrap-up, facilitators summarize discussion points; discussion of future plans
3:20pm: SESSION END
(Last 10–15 minutes before start of next session: create quick flip-chart recaps)
User Experience Practitioner & Design Researcher Interaction

KEITH INSTONE
UX Practitioner & Design Researcher

Two goals for the Decipher conference are:

• Connect emerging and experienced design researchers in academia and beyond
• Create opportunities for dialogues that foster mentorship and collaborative connections

One way to accomplish those goals is to encourage interaction between teachers and researchers in academic with practitioners in industry.

In general, partnering with colleagues in academia make practitioners better at what they do by increasing their professional capabilities upon a theoretical foundation. Industry employers get access to talented employees [students] and access to knowledge [academic research]. Teachers can improve the relevancy of their courses and researchers can find applications of their research.

Specifically for design research, collaboration between academia and industry practice will advance design research by helping practitioners understand the theoretical foundations of design research and academics grasp the constraints of industry.

The first step in collaboration across academia and industry is getting people from both worlds to spend time together. Conferences are one venue. For Decipher, a specific call for UX practitioners was issued. Next came a proposal for a session at Decipher where practitioners could meet the academics and discuss how to use the Decipher conference to plant some seeds for collaboration.

If all goes well at the “UX Practitioner & Design Research” conversation at Decipher, this will happen. First we will share stories of collaboration that are already happening [such as practitioner in residence programs]. Then we will map out sessions that cover industry-academia collaboration topics. In addition to just learning from each other, perhaps some future collaborations will refer back to Decipher as the starting point. We will add them to the stories of collaboration in the UX world we are collecting.

REFERENCES

» Strategy and Objectives

SESSION GOAL

This session will address the conference goals around collaboration between academia and industry practice. The first step in collaboration is to have industry practitioners [such as User Experience professionals] interact with academic design researchers. In this case, we will all be interacting as we discuss collaboration.

Collaboration between academia and industry practice will advance design research by helping practitioners understand the theoretical foundations of design research and academics grasp the constraints of industry.

EXPECTED OUTCOMES

We hope that this session raises awareness of existing examples of academia-industry collaboration and
encourages attendees to try their own types of collaborative efforts.

The examples of collaborations will be added to the research described in Instone, et al. (2017).

STRATEGY

The first part of the session will be introductions of the participants. Each person will be asked to include a short story of academia-industry collaboration or a challenge they have faced. The introductory session will help attendees connect with each other during the rest of the conference and beyond. The list of stories and challenges will also give us a common framework for talking about academia-industry collaboration.

The second part of the session will focus on the Friday and Saturday Decipher conference sessions which touch on connecting teaching and research in academia with practice in industry. We will discuss some of the sessions that mention collaboration and attendees will be able to frame other sessions in this context. The goal here is to help attendees recognize and prepare for sessions that might encourage these collaborations.

The third part of the session will be an open discussion about academia-industry collaboration. We are not sure what will happen.

REFERENCES


» Timeline & Guidelines

TIMELINE

The first part of the session (10-15 minutes long) will be introductions of the participants. Each person will be asked to include a short story of academia-industry collaboration or a challenge they have faced. The introductory session will help attendees connect with each other during the rest of the conference and beyond. The list of stories and challenges will also give us a common framework for talking about academia-industry collaboration.

The conversation leader will summarize stories and challenges from attendees on sticky notes and post on the wall in a loosely-grouped manner.

The second part of the session (10-15 minutes long) will focus on the Friday and Saturday Decipher conference sessions which touch on connecting teaching and research in academia with practice in industry. We will discuss some of the sessions that mention collaboration and attendees will be able to frame other sessions in this context. The goal here is to help attendees recognize and prepare for sessions that might encourage these collaborations.

The conversation leader will have key sessions documented on large sticky notes to foster discussion. Additional sessions will be added as suggested by the attendees. Some crude grouping of sessions by an emerging theme may occur.

The third part of the session (in whatever time remains) will be an open discussion about academia-industry collaboration. We are not sure what will happen.

Additional examples of collaboration and challenges may emerge and be added to the collection of sticky notes from the session.

After the session, collection of sticky notes will be photographed and shared right away (e.g., via Twitter). The raw materials will be saved and typed up later to be a part of the post-conference write-up process.
The Creative Performer: Using Sport Psychology to Break the Mold in Design Education and Practice

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AMANDA ALEXANDER
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Keywords:
Design Pedagogy, Performance Psychology, Mindfulness Practice, Mental Skills Training, Cross Discipline, AIGA 2025

ABSTRACT

Heavy emphasis on “the outcome” as a tool for judging success is the core common denominator between designers and elite performers. Even though both populations are trained to operate at high levels, the tendency to neglect process and over-focus on outcome is a common cause of performance deficits. Much like simply following a playbook does not guarantee success for an athlete, following predetermined steps of a design process diagram does not guarantee a truly successful outcome or product for a designer. We propose that there is a growing need to address the performance needs of designers as whole people, as human beings who are as impacted by the process of creating as they are by the final outcome. Through collaboration with a licensed sport and performance psychologist, this workshop will demonstrate how to integrate key aspects of performance psychology into design education and practice—specifically in the areas of Mental Skills Training and integration of Mindfulness-based practice into the design process. Our hope is to develop an experiential approach to design pedagogy and practice that when integrated with common contemporary design methodologies such as “Design Thinking” or “Speculative Design” will provide a more sustainable path to positive advancement of our discipline and improved design education experiences.

Traditionally, designers are required to push boundaries and creative limits to develop unique outcomes in their work—all while dealing with the interpersonal challenges of working with a client and/or a multidisciplinary team. Emphasis on these creative breakthroughs as well as the stress of deadlines, coping with rejection, fear of failure and critical feedback, and creative blocks as a result of mental fatigue are all common obstacles that must be managed on a regular basis. These obstacles mirror the unique performance pressures within athletic and other performance arenas. In addition, it’s important to point out that we are now asking designers to do even more than we have traditionally expected them to do. The designer of tomorrow is not only fluent technologically on a diverse range of media/software platforms, they are increasingly tasked to be deeply self-aware and capable of tactfully providing design solutions that may encompass sensitive socio-cultural and political issues. In regards to complexity, AIGA Designer 2025: Why Design Education Should Pay Attention to Trends, states “Problems are increasingly situated within larger systems that are characterized by interdependent relationships among elements or activities. Relationships are physical, psychological, social, cultural, technological, and economic in their effects, requiring interdisciplinary expertise. Constraints compete for priority and are unstable in their influence on the problem situation. Change in one relationship reconfigures others. Methods for working at this scale are different from those developed for solving simple problems and require collaboration among experts in different fields” (AIGA Design Educators Community, 2017). In addition, AIGA’s recent development of the Diversity and Inclusiveness Initiative and accompanying task-force provide further evidence of an active movement to address the increasingly complex relationship between design practice, education and society. Forward thinking design education programs are incorporating built-in curriculum components (such as the University of Florida Graphic Design’s Mint program) that are geared specifically to prepare students to work in culturally diverse communities. Programs like this could benefit from integrating psychological skills training so that students increase their understanding of themselves and others, therefore filling an existing need in contemporary design and education practice.

Sport and Performance Psychology as an applied field
has been growing in popularity within athletic, creative, business/executive, and academic communities. The psychological and emotional rigor of the creative process and its potential impacts on those that practice within the arts has been well-documented (Carson, 2011; Ludwig, 1992). Our goal, therefore, is not to reiterate the phenomenon of psychopathology or mental illness within creative populations, but to illustrate a strengths-based approach via mental skills training to facilitating peak performance within creative environments.

In this workshop, we aim to engage the audience to further explore these questions, to examine the application to their own design challenges, to interact with other audience members, and to participate in a number of guided activities. Through this engaging format, the speakers will illustrate effective applications for psychological skills and ‘mental toughness’ such that when incorporated into their design processes students and practitioners might experience greater sustained creative growth.

**TIMELINE**

Provide your session timeline below; feel free to go on to the next page if needed!

- Guided mindfulness training session for full group led by Dr. Alexander—25 Minutes
- Debrief session—shared experience dialog first in breakout groups, then full group—25-30 Minutes
- Case study presentation (digital) with Prof. Elrod and Dr. Alexander followed by short Q&A Session—25-30 Minutes

**PARTICIPANTS IN THIS WORKSHOP SHOULD EXPECT TO GAIN THE FOLLOWING:**

- a basic working knowledge of the principles of psychological skills training—specifically Mental Skills Training and contemporary Mindfulness-based Practice
- insight into key contemporary challenges in design practice and education
- knowledge and understanding of potential applications of performance psychology
- principles in the areas of design education and practice

**INTENDED AUDIENCE**

Design Educators, Design Students, Practicing Designers—anyone interested in multidisciplinary collaboration and/or non-traditional approaches to design education

**REFERENCES**


**Strategy and Objectives**

Participants in this workshop should expect to gain the following:

- a basic working knowledge of the principles of psychological skills training—specifically Mental Skills Training and contemporary Mindfulness-based Practice
- Insight into key contemporary challenges in design practice and education
- Knowledge and understanding of potential applications of performance psychology principles in the areas of design education and practice
- Direction / confidence on how to go about incorporating facets of mental skills training and mindfulness-based practice in individual and collaborative classroom settings

**STRATEGY**

A variety of methods to engage audience members will include, but not be limited to the following: Experiential, full group activity led by a licensed, mental health professional, break-out groups, full group Q&A and a digital case study presentation and a handout for take-away. In addition, the facilitators will perform a brief, anonymous feedback survey to collect at the end of the session.
• Doing Design Research actively in the classroom in an experiential, cross-disciplinary way.
• Topics covered have universal benefits related to mental health and developing design teaching and practice that are not linked to skill level or professional standing. In addition, the presenters intend to create a safe learning space where diversity and active, honest participation and are key factors that serve to drive our collective conversation forward.
• The presenters have worked together within very similar formats / timelines before and are trained professionals in their respective fields.

» Timeline & Guidelines
• Guided mindfulness training session for full group led by Dr. Alexander—25 Minutes
• Debrief session—shared experience dialog first in breakout groups, then full group—25 Minutes
• Case study presentation (digital) with Prof. Elrod and Dr. Alexander followed by short
• Q&A Session for full group—20 Minutes
• Written anonymous audience feedback writing session and collection—10 minutes

Critical Race Design Studies: Fusing Research, Design and Social Work
for the Design of Just Cities.

NEKITA THOMAS
Visual designer, researcher, and educator

KEYWORDS
Critical Race Design Studies, Place Making, Design Studies, Just Cities, Cross-Cultural Dialogue

Between urban/social injustice and the spaces and audiences needed for justice is the research and practice employed to do so—Critical Race Design Studies. CRDS examines racism and oppression as systems that are imagined, designed, and executed. Treating graphics, designed objects, and illustrations as indexes for these underlying structures that can possibly be re-designed is one of the main theories around this new area of study.

This activity group aims to identify opportunities and develop best practices for integrating Critical Race Design Studies into academic classrooms and urban communities as well, as an urban pedagogy to address issues of race and oppression. There is an opportunity to explore intersections between academia and industry by defining the next design classroom as a fluid space where classroom walls are not fixed and problem-solving for justice happens within the academy AND amongst the public.

» Strategy and Objectives

SESSION GOAL
• The purpose of this activity group is to explore and develop an understanding of Critical Race Design Studies; its methodologies, practical approaches, challenges and opportunities. Participants will assess the structure of undergraduate design studios on the basis of environment, interdisciplinary approaches/strategies/methodologies, designed products/solutions, and evaluative standards to optimize conditions for practicing critical race design.
• Racism is a system and systems are imagined, designed and executed. Graphics, designed objects, and illustrations can function as indexes for these underlying structures and can therefore, possibly, be redesigned. This is one of the main theories around the study and practice of critical race design studies. This aspect of design can be defined as: an interdisciplinary design practice that intersects critical race theory, systems thinking, speculative design, design history, and critical making to analyze and critique the effects of visual communication, graphic objects, and their associated systemic facilitations of racial identity. Focusing on critical race design studies provides an opportunity to advance design research by addressing concerns related to both the functionality and practicality of critical race design products as viable tools for social change and concerns related to practicing critical race design studies in privileged academic design spaces that are far removed from the communities which they intend to serve. Additionally, considering the implementation of a living lab research concept, social work and urban planning methodologies, and standards for evaluating products of critical design proposes additional ways to strengthen critical race design research.

• Key question(s) that participants are encouraged to explore during this activity group are:
  » What is Critical Race Design Studies?
  » Where are the gaps in the field of socially responsible design? Do the gaps influence Critical Race Design Studies? What are the biggest challenges to this area of design?
  » What are organizational and research models of successful and sustainable ways of working in socially responsible design?
  » What constitutes the best education and research model for the aspiring critical race designer?
  » How can methods used in disciplines external to product design contribute to critical race design studies? vice versa?
  » What is to be said about evaluative standards and impact assessment of design products that emerge from critical race design studies?

» How can we effectively prepare future generations of designers for the area of critical race design?

EXPECTED OUTCOMES
• Expected session outcomes are:
  » Identification of gaps, challenges, successes and possibilities in practicing and teaching critical race design studies.
  » Increased awareness of design educators and organizations who are leading the charge in reconsidering race, design and the black subject via critical race design studies.
  » Proposed methodologies, research models, engagement and evaluation strategies for critical race design studies.

• Success of my session will be measured by:
  » A collection of proposed suggestions for Critical Race Design Studies curriculum.
  » Formulation of a directory of case studies for scholars interested in Critical Race Design Studies based on suggestions from the activity group.
  » List of ways to approach university administrators about the importance of and support needed for critical race design research.
  » Results from a survey on the viability and probability of integrating Critical Race Design Studies in participants respective design programs?

STRATEGY
• The approaches used to engage participants are:
  » Brief interjected examples of Critical Race Design
  » Energizers tailored to local and corporate culture of Michigan
  » Discussion questions
  » Short exercise/quick small group breakout
  » Use of live polling to encourage personal connections and shared experience between participants
  » Brief facilitator and participant debriefing

• the conference themes/topics this session addresses:
Defining design research: Defining practice-based research across design disciplines, incorporating culturally significant ways of thinking and making, conducting research to inform the things one makes as well as making things as a prompt for future research.

Doing design research: exploring tacit & explicit knowledge and skills needed for design research, diversification of the design discipline through research (in terms of cultural perspectives, disciplines, access)

Teaching design research: Bringing research to the classroom by connecting one’s design research agenda to curricular activities, sharing methodologies, theories and processes that engage making as a form of knowledge production and understanding.

Inclusivity in this session will be addressed through:
- Use of live polling and anecdotal sharing to encourage both personal connections and shared experience between participants
- Verbal, visual, and written communication aids
- The feasibility of this activity group will rely heavily on sticking to prefabricated prompts and recording methods.

Decipher Session Timeline & Guidelines

3:00 - 3:15p (15mins)
Introduction:
- Facilitators Bio and Research
- Defining Critical Race Design Studies: Principles, Practitioners, Examples of CRD Products

Keynote presentation accompanied by a print version of the introduction distributed to participants. Printed materials include a case study related to CRD and section for recording session notes.

3:15-3:45p (30mins)
Exploring Gaps and Challenges; Questioning:
- Research Methodologies:
  » Methodologies from Social Work (beyond systems thinking)
  » Methodologies from Urban Design
  » Addressing the value of fictional and non-fiction products
- Practical Models:
  » Living labs, Hybrid models, Incubators, and Design centers
  » Addressing community collaboration
- Knowledge Sharing:
  » Ideas for collecting, sharing and increasing the quality and quantity of CRD research and scholarship.
  » Addressing support of CRDS practitioners

Q&A/Role Play small group breakout session amongst participants addressing 1 of 3 topics: methodologies, practical models, or knowledge sharing platforms to discover emergent themes, issues, and best practices.

Sessions are aided by printed guides containing Q&A/Role Play prompts as well as post-it notes and large sheets of butcher paper to record answers. Affinity partners can assist in keeping time.

3:45-4:10p (25mins)
Pathways and Proposals:
- Sharing key insights/recommendations/ opportunities within 3 topics

Reconvene for whole group discussion to share 2-3 key insights/recommendations/ opportunities from small group breakouts.

4:10-4:20p (10mins)
Recap and Participant Survey
- Suggested next steps / questions
- Collecting contact information for future collaboration and online participant survey

Pointing to resources that encourage and help structure implementation of critical race design studies.
Teaching Designers to Write

DORI GRIFFIN
Assistant Professor at Ohio University’s School of Art + Design

GABRIELA HERNANDEZ
Assistant Professor of Graphic Design at the University of Florida

Keywords
Writing, Dissemination, Pedagogy, Praxis

WRITING AND DESIGN PEDAGOGY
This conversation around “Teaching Designers to Write” will facilitate an active discussion about discipline-specific writing as part of design education at the undergraduate and graduate levels. Participants will discuss the scholarly and pragmatic challenges and benefits of incorporating different forms of writing into design pedagogy and share experimental strategies from their own praxis. Capturing and sharing these observations will enable design educators to formulate emergent pedagogical frameworks for teaching writing as a design skill.

WHY WRITING MATTERS
Though often conceptualized as an academic practice divorced from professional application, written communication is in fact vital for designers during and long after they conclude their educations. Even the most mundane formats – client emails, project briefs, internal memos – require a certain level of skill in order to function and meet professional standards. This premise got its moment in the spotlight last year, when John Maeda’s 2017 “Design in Tech” report described writing as a “unicorn skill” for professional designers (Maeda 2017, 27). FastCo (Schwab 2017; LaBarre 2017) and Design Observer (Gordon 2017) were quick to comment on the report for audiences both popular and academically inclined. Such media coverage demonstrates the practice-based value of writing skills for emergent design professionals.

For designers participating in criticism and/or scholarship, the capacity for successful writing holds value aside from client-driven formats. Writing is increasingly valued by the discipline, as demonstrated by a growing number of contributions to the literature which deal with the relationship between design, education, and writing (Erk et. al. 2015; Gelmez and Bagli 2017; Lyon 2009; Robison 2008). This is perhaps most evident as design grapples with the question of the discipline’s terminal degree structure and its identity as a scholarly versus professional field (Hockey and Allen-Collinson 2005). A lack of formal instruction in discipline-specific writing was cited as a primary roadblock for practice-based PhD students in the UK in a 2007 qualitative research survey. Lack of training in research-based writing on the part of PhD students’ supervising faculty was further identified as a key component in the structure of this roadblock (Hockey 2007). At the professional level, a lack of intellectually robust and widely-read criticism differentiates graphic design from other design disciplines, such as architecture and industrial design (LaRossa 2017). Importantly, these neighboring design fields embrace a model wherein practitioners participate actively in a formal, flourishing body of literature.
Design educators often teach skills excluded from their own education, including research methods, graphic design history, or emergent technological capacities and software interfaces. Both anecdotally and in the literature, writing is a skill that designers and design educators have had little opportunity to cultivate formally. Traditionally, the creative space of the designer has been in the visual and not the written realm. Now that designers are crossing disciplines more actively, even aggressively, the need to write – and write well – has become exceptionally important. Yet it remains difficult for many educators to conceptualize and operationalize writing as a design skill in their own practice, and even more difficult to guide students through the writing process in an enriching way. Clearly, design education has an important task in this regard.

**PRAGMATIC CONSIDERATIONS**

There are many ways to utilize writing as a design skill. This conversation centers on posing practical, context-specific questions about how to teach designers to write. Responding to in-session prompts, small groups will share examples, resources, and questions to inform future pedagogical frameworks. At the conclusion, the larger group will capture insights from these conversations. Participants might reflect on the following before the conversation:

1) What are the basic writing skills that are useful to all designers, and what are strategies for teaching/learning those skills?
   - What is the skill set all design students would benefit from learning, no matter their educational level or career goals?
   - Should basic design writing curriculum be integrated into the studio or elsewhere, and what might this look like?
   - What projects to develop design-specific writing skills have been successful (or unsuccessful!) for you?
   - How do we convince students and co-educators of the importance of writing?
   - Are there existing models of collaboration between design and writing programs to teach design-specific writing skills? What do (or might) these look like?

2) Which skills and capacities are appropriate to specific domains within design, and how might curriculum models cultivate these?
   - At the undergraduate level, what are strategies for incorporating writing into a very tight curriculum plan which seeks to prepare students for professional practice?
   - At the graduate level, what are the differences and similarities between teaching writing for design practitioners, educators, and academics?
   - What are the existing and desired learning resources for design educators, both those seeking to publish and those needing to strengthen their own skills prior to teaching writing?
   - How do code-switching and multilingualism play a role in design writing?
   - How might models of “teaching writing as a design skill” incorporate the visual without abandoning the goal of teaching writing?

**A FRAMEWORK FOR FUTURE ACTION**

Design educators need access to pedagogical literature which can inform our practice. Our discussion of studio pedagogy is increasingly robust and well-represented within both academic and trade literature. But our engagement with scholarly modes of research and dissemination – and how to teach these – is not yet flourishing. Our hope is that the observations and questions raised in this session, once documented and disseminated, will contribute to the literature of design pedagogy, specifically its engagement with writing as a valuable skill within multiple design domains.

**REFERENCES**


Participants will focus on the following key questions and conversation prompts during the session:

- Identification and analysis of basic writing for all designers
- Known or possible strategies for teaching/learning those writing skills
- Writing learning vs studio learning
- What is successful vs unsuccessful, and why
- Methods to make writing skills relevant for design students
- Undergraduate vs graduate writing—how are they different
- Existing/available resources for scholars, practitioners, students
- Multilingualism and design writing
- Diverse/alternative ways to approach design writing

EXPECTED OUTCOMES

The documentation of our conversation aims to unveil weaknesses, opportunities, and advantages of existing and alternative methods to teach designers to write, offering a clearer picture of the state of design teaching in our national context. Personal stories, challenges, and the identification of existing needs will help us build a framework that will contribute to the literature of design pedagogy, specifically its engagement with writing as a valuable skill within multiple design domains.

STRATEGY

We will place personal stories and accounts in the center of the conversation. We expect to help participants identify successes, past and present issues from their experiences as writing learners or teachers in varying levels, which will help them connect and empathize with each other. We will place participants into smaller groups where they can first share their reflections to later report to the bigger group. We will use cards with basic questions about writing and design to ignite both group and general discussions.

The authors believe that this conversation topic relates to all the conference themes. For example, it will help Define...
aspects of writing in design that may not be implemented within design education early enough, contributing to incipient or shallow design research practice. The definition of a writing in design framework supports research, design teaching, and students, as it may provide theoretical and practical resources that could simply result in the betterment of writing skills that help practitioners to produce successful grant applications and publishing opportunities.

The authors enthusiastically expect to spark the interest within participants from different nationalities and backgrounds to attend our conversation, as we aim to expand the knowledge about the role that code-switching and multilingualism play in design writing teaching and learning in our national context. At the same time, we are highly interested in learning more about the limitations and/or opportunities that alternative ways to “write” in design (namely visual narratives, audiovisual approaches, touch-based media, etc) offer to designers and scholar with diverse learning and practice needs. Authors also feel strongly about the active integration of students, teachers, and researchers belonging to diverse academic institutions to participate in this conversation. We believe that design research does not live exclusively in research universities, and with this conversation we hope to bring growing attention to the experiences and challenges of professors and students at teaching institutions, minority-serving universities, and community colleges.

» Timeline & Guidelines

TIMELINE
SESSION START (3:30pm)

3:30-3:40

3:40-4:00
Group activity/conversation, aided by cards with questions. Dori+Gaby.

4:00-4:15
Each group reports back to general group (5 min each). Dori+Gaby

4:15-4:20
Final remarks/comments. Dori+Gaby.

4:20
Session ends

(Documentation by authors during session. Support will be provided by a group of graduate students from Ohio University School of Art + Design)
Demystifying Collaboration in Design Academia and Industry

MARTY LANE
Design educator, Researcher, and Author
REBECCA TEGTMEYER
Design educator, Researcher, and Author

Keywords:
Collaboration, Process, Tenure

Designers can find value in a collaborative process in the classroom or in their research practices. We know that other contributors add value to the design process by providing creative perspectives, ways of knowing, and critical evaluations beyond our own. We push ourselves the hardest, and ask the toughest questions, when we know another designer, writer, photographer, historian, anthropologist, etc. will be working on the same problem. As the AIGA 2025 trends point out, our increasingly global world requires interdisciplinary teams to tackle a diverse scale of complex problems. Designers are often ill prepared to do collaborative and interdisciplinary work, or may discover they are facing scrutiny when being evaluated due to the collaborative nature of their work.

This conversation will focus on the doing and disseminating of design research as related to collaboration. We will work to define what collaboration is and what it is not in a field typically rooted in client-based practices and formal outcomes. We will dig into how collaboration may be practiced and articulated differently in academia and industry to uncover connections between the two. We will share collaborative models we’ve identified in our forthcoming book on collaboration, Collab + Design Ed: Collaboration in Design Education. The models spanning academia and industry — Community Collaborations with Students, Faculty and Peer Collaborations Across Disciplines, Cultural Exchanges, Intra-Disciplinary Faculty Collaborations, and Academy and Industry Collaborations — offer starting points into re-thinking collaborative relationships and processes.

We will transition the conversation from focusing on the doing to the disseminating and discuss the assumptions and perspectives of potential evaluators of collaborations. We have found that the process of collaboration is scrutinized and questioned more critically than work done alone when reviewed by our institutions. History suggests this is a holdover from the era of the lone creative genius and continues due to a lack of resources and knowledge available to support new ways of working. When our complex world demands interdisciplinary collaborative work, why is it so difficult to articulate the value of collaboration and what are the factors contributing to this? Understanding the reasons for this scrutiny (by those outside of the collaborative practice) could help to further clarify the justification and explanation for this way of working. We are interested in leaving this conversation with a best practice for articulating collaborative work during the tenure and/or promotion process.

» Strategy and Objectives

SESSION GOAL
• Define what collaboration is and is not.
• Explore how collaboration is practiced and articulated in academia and industry working to discover connections between the two.
• Share collaborative models from our book -- how might these offer starting points to rethink collaborative relationships and processes.
• Discuss the assumptions and perspectives of potential evaluators of collaborations.
• Why are collaborations scrutinized?
• How have people successfully framed collaborations when going up for tenure or promotion?

EXPECTED OUTCOMES

We are interested in leaving this conversation with a best practice for articulating collaborative work as well as new ideas on how to initiate and maintain a rich collaborative practice. This could be hosted on the AIGA DEC website.

We believe a successful session will be one where there is lively discussion, new discovery, and enough material generated for us to develop a document of best practices.
STRATEGY

- We will engage participants guiding them through by prompts that lead to individual and shared responses and group discussion.
- The conference themes “doing” and “disseminating” are at the forefront of this discussion.
- In order to be inclusive, we will ask about the types of institutions where people work (research vs teaching vs practice) and understand the expectations for promotion and tenure.
- We will focus more time on the disseminating aspect of the conversation so we can allow time to discover and articulate specificity regarding tenure and promotion.

Decipher Session

» Timeline & Guidelines

SESSION START
3:30-4:20 (50 min)
28 people (7 groups of 4)

(5 min)
Slide Introduction
- Who we are (collaborations together)
- Overview of our book
- Outline of what we want to cover
- Goals for the session
- Pass out contact sheet for participants

(12 min)
Break people into small groups of 3-4 by institution type (2 min alone / 10 as a group)
1) Define collaboration
2) Define what it is not
3) List barriers they face or concerns they have about promotion and tenure as it relates to collaboration

(10 min)
One person from each group shares and group discussion

(10 min)
Each group pick one issue from above
4) Brainstorm solutions to overcoming challenges

(10 min)
One person from each group shares

(1 min)
Wrap Up
SESSION END
(Last 10–15 minutes before start of next session: create quick flip-chart recaps)
**Workshop on Proposing, Executing, and Writing Up Research through Design**

**Beyond methods: Developing Designers’ Capacity for Instrumental Judgment**

**Client-based project work as experiential education: Connecting research to pedagogy**

**Bridging Cognitive Bias Gaps within Interdisciplinary Product Teams**

**Racism Untaught Workshop**

**Creating a Balanced, Symbiotic Relationship by Integrating Teaching & Research**

**Identifying and Fostering New Connections with the Public Sector at the Federal Level**

**Principles of Practice for Designing with People: Exploring Ethical Frameworks, Mindsets, Values, Knowledge and Skills for today’s Design Researchers.**

**In What Ways Do Critical Practices (Re)Invigorate Design Research?**

**Engaging Design Students in Value Discovery as “Everyday Ethicists”**

**Let’s Play Together: Creating Games for Cohesive and Diverse Design Research Teams**

**Discursive Design and the Question of Impact: Perspective, Pedagogy, Practice**

**Teaching Design Research: Challenging the design research ‘canon’ in the classroom.**
Workshop on Proposing, Executing, and Writing Up Research through Design

JOHN ZIMMERMAN
Professor at Carnegie Mellon's HCI Institute

Keywords
Research through Design, Design Research, Research as Design, Proposal Writing, Research Execution, Writing Research

INTRODUCTION
Over the last three decades, Research through Design (RtD) has emerged as a new kind of design research distinct from design studies done in the academy and user research done in design practice. This approach asks researchers to use design thinking and design action as a way to produce important new knowledge. RtD has become popular within the Human–Computer Interaction (HCI) research community and in design schools in both Europe and Asia. It has made much less headway in the United States, where few design schools have PhD programs and most focus on training students to become practitioners. Recently, some US design schools have become interested in developing research programs and recruiting new faculty who can lead research projects and who can establish collaborations with industry and with other disciplines within the academy. This workshop aims to cover the basics of research through design and to walk through how research projects can be proposed, executed, and disseminated in writing.

BACKGROUND
When engaged in RtD, researchers act much like design practitioners. They work to discover a possible, preferred future by, “gaining actionable understanding of a complex situation, framing and reframing it, and iteratively developing prototypes that address it” (Stappers and Giaccardi, 2017). Over the last several years, RtD has organized around two poles. At one end are researchers making things that point to a pragmatic preferred future, and at the other are researchers making provocative things meant to encourage critical discussion of the current state of the world (Forlizzi et al., 2017). This workshop will largely focus on proposing, executing, and writing up RtD research that falls on the pragmatic side.

Design researchers have discussed how RtD is distinct from but complementary to scientific and engineering research (Zimmerman and Forlizzi, 2014). They note that science seeks universal, generalizable knowledge, in contrast to design’s focus on making an ultimate particular. Engineering seeks to make novel, technical advances that offer an objective improvement over the state of the art, in contrast to the subjective, preferred future that is the focus of RtD. RtD seeks to reframe problematic situations, often by changing the underlying goal or objective. In this way, RtD makes a subjective, analytical proposal about a preferred future that both could and should be achieved. This idea of reframing by changing the goal has been a focus of much design research, and it is well discussed by Kees Dorst (2011).

Design researchers claim that RtD researchers make more substantive research contributions when the form a research program and repeatedly investigate the same problematic situation (Koskinen et al., 2011).

WORKSHOP STRUCTURE
The workshop is divided into four phases. In the first three phases, workshop participants will share their own experiences of proposing, executing, and writing design research. Participants do not need to share a case study for each of these three topic areas; however, they will need to share at least one case related to at least one topic area.

Phase 1: Proposing Design Research
This phase of the workshop will start with a brief introduction to constructing a research proposal. Next, participants will share their own cases, experiences, and frustrations with writing and submitting proposals. They will discuss their process of discovering potential funders, the work to frame their research towards their funder’s goals, challenges with intellectual property, and plans for stewardship.

I plan to cover work on a recent proposal I submitted with two collaborators to National Science Foundation (NSF). Our proposed work investigates robot re-embodiment. This is the question of when and if a robot’s consciousness should move between different robot bodies. For example, if you...
interact with an Amazon Echo at home, should Echo also drive your driverless car? Should there be a separate Echo “consciousness” in the home for each family member? I will focus on how we made a strong case for needing design research, because within the human-robot interaction community there is no agreement on when or if a robot consciousness should move. Design research has a lot to offer in situations with lots of ambiguity and few insights of what would be ideal. I will discuss how we worked to align our personal research agendas with the goals of this specific NSF program. Spoiler alert, our proposal was funded.

**Phase 2: Executing Design Research**

Phase 2 will follow a similar structure to phase one. Participants will share their own cases of executing design research projects. This includes breaking the work down into executable pieces, coordinating with collaborators and research assistants, participation and/or communication with funders, and work to connect the individual piece of research to larger research programs as well as to master theses and/or PhD dissertations. Participants will share challenges they faced including dealing with IRBs (Institutional Review Boards) and gaining other types of required permission or resources.

I will share a case about investigating virtual possessions; new digital things that replace people’s material possessions (e.g., books, music, money). Our team wanted to understand why people seem to value their digital possessions less than their material possessions. We also wanted to explore what we might do to make people perceive the collections of virtual possessions as more valuable. A big piece of this work involved creating a super teenage bedroom of the future, where teens could hang out with and engage with their collections of material and virtual possessions (Figure 2).

The project involved a great deal of piloting to find the level of fidelity; one that allowed participants to feel they were in a teen’s bedroom in order for them to more easily draw on their experiences in their own bedrooms.

**Phase 3: Writing Design Research**

Phase 3, following the same pattern used in phases 1 and 2, will have participants share their own cases of documenting and writing up their research findings for dissemination to different venues including peer reviewed publications and the news media as well as less familiar venues such as galleries and trade shows. Participants will share strategies they found successful and challenges they encountered.

I will share an ongoing project to make a Decision Support Tool. We are collaborating with biomedical engineers to...
develop a system that predicts how long a patient will likely survive after receiving a mechanical heart. My team focuses on conducting fieldwork at clinical sites as well as design of the interface used by clinicians. I will share how we developed a strategy to publish different aspects of the work in the design research community, the HCI community, the medical community, and with the tech industry.

**Phase 4: Consulting**

The final phase of the research will offer participants time to connect with each other. Based on the cases that have been shared and discussed, participants will have time to approach one another to get advice from other participants on the challenges they face and to even test the waters for future collaborations. This will be an open session meant to build a stronger community of design researchers.

**WORKSHOP HOST QUALIFICATIONS**

I am a professor at Carnegie Mellon University’s HCI Institute, one of seven departments within the School of Computer Science. The HCI institute is an interdisciplinary department that mixes faculty and students with backgrounds in design, computer science, cognitive psychology, and social psychology. I conduct research on how people might better interact with intelligent systems working across many domains including domestic environments, health care, education, accessibility, and work environments. I advise PhD students, mentor post-docs and junior faculty, and teach master and undergraduate students. I regularly apply for research grants (which occasionally get funded), submit papers for peer-review (which sometimes get accepted), and help to organize and run organizations committed to design research.

**REFERENCES**


» Strategy and Objectives

**WORKSHOP GOALS**

- Provides opportunity for participants on share and learn from each others’ experiences of using Research through Design as a method of scholarly research.
- Each participant will have an opportunity to share a case of (i) proposing, (ii) executing, or (iii) writing about Research through Design projects.
- By the end of the workshop, participants should have identified and made contacts with other design researchers doing similar research.

**EXPECTED OUTCOMES**

- Increase participants’ chances of winning proposal awards, executing exceptional research, and writing accepted and even award winning papers.
- Build community of Research through Design practitioners.

**STRATEGY**

- The workshop has three main sections where participants will share their cases of proposing, executing, and writing up Research through Design.
- Workshop ends with a consultation session, where participants can seek each others help on research challenges they face. Decipher Session Timeline & Guidelines
» **Timeline & Guidelines**

Proposing, Executing, and Writing Up Research through Design

**SESSION START**

10:00 am  
Introduction to the session: Overview of Research through Design. Overview of plan for this workshop. Introduction of all participants to each other

10:10 am  
PROPOSING: Participants share their cases of writing proposals for Research through Design projects

10:40 am  
EXECUTING: Participants share their cases of executing Research through Design projects

11:10 am  
WRITING: Participants share their cases of writing up Research through Design projects

11:40 am  
NETWORKING: Participants interact with each other based on what has been shared, making connections with people who have expertise they are looking for or people they may want to collaborate with.

SESSION END (ends at noon)

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**Beyond methods: Developing Designers’ Capacity for Instrumental Judgment**

**KELLY MURDOCH-KITT**  
Assistant Professor at University of Michigan’s Stamps School of Art and Design

**COLIN M. GRAY**  
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**PAUL PARSONS**  
Assistant Professor in the Department of Computer Graphics Technology at Purdue University

**AUSTIN L. TOOMBS**

**MARTI LOUW**  
Director, Learning Media Design Center at Carnegie Mellon University

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**Keywords**  
Design methods, instrumental judgment, rigor, research/practice divide

**OVERVIEW**

How are we currently teaching design research? How can we do it better? This activity group encourages participants to explore the ways that educators teach research-through-making and research-informed making at multiple curricular levels. For example, students seeking advanced degrees in design are grappling with “rigor” and “distinction,” learning how these characteristics of research are defined and understood in other disciplines as well as in relation to creative practice. Meanwhile, educators at k-12 and undergraduate levels struggle to incorporate creative inquiry processes in meaningful ways, grasping for resources and leaning on others’ “design thinking” approaches.

Prior to participating in this session, organizers will ask attendees to collect and submit 3–5 examples (e.g., syllabi, briefs, exemplars of work) related to teaching design research, with either successful or unsuccessful outcomes.
These can include published or unpublished papers or case studies, books, websites, syllabi, project briefs, documentation of project outcomes, games, card decks, or other resources. These may be authored by the participants or may be secondary resources that have been used in a design classroom.

The goal of this session is to generate discussion, explore examples, discover new resources, and ultimately create a usable cache of tools and references for those teaching (and learning) design research at various levels within and outside of academia.

BEYOND METHODS: STUDENTS’ DEVELOPMENT OF INSTRUMENTAL JUDGMENT

Owning a design methods book does not teach students at any level to cultivate judgment. Inculcating students’ “instrumental judgment” (Nelson and Stolterman, 2012) is one of the duties that design educators must take seriously as we collectively prepare students to move to the next level of their life and work. Those who have attempted to integrate design research into their courses understand that the task is not as simple as selecting the appropriate book of methods and asking students to select and apply them. Instead, educators must create opportunities for students to step back and see what connects different methods to each other, why certain methods are especially useful in specific contexts, and where entirely new methods or combinations of methods may be needed to inform intuition, mitigate biases, or gain empathy for the design context—in other words, developing a mindset towards methods (e.g., Gray, 2016).

Students require substantial space for experimentation and failure so that they can learn when something is not working or when a different approach would serve them better.

CASE STUDY: SPIRALING STUDENTS DEVELOPMENT OF INSTRUMENTAL JUDGMENT

We will briefly describe one approach to systematically developing students’ instrumental judgment capacity that has been implemented in a novel undergraduate program in UX Design at Purdue University (led by several of the authors, and documented further in Vorvoreanu, Gray, Parsons, & Rasche, 2017). To overcome common course-based instructional constraints in design education, we created a new model of studio education which we refer to as the integrated studio. In an integrated studio environment, students learn across multiple strands of content in each course session, practicing design activities and critique, while also blending research, history, ethics, and psychology skills in a reflexive, “spiraling” way. In a cascading set of studios across five academic semesters, students learn about, build, and deepen their skills in many areas of user research, prototyping, evaluation, and design philosophy. A sample of the research and analysis methods addressed in each semester is provided in Table 1.

To achieve our aim of spiraling the development of research skills, we have created a dual-strand studio experience each semester (Figure 1), enabling students to learn and deepen their skills in the heightened reality of our learning studios, which are engineered to promote certain forms of design development and a baseline of skill. In parallel, students practice their skills through industry projects in a program-wide experience studio environment, where students work on cross-cohort teams on semester-long projects with

<table>
<thead>
<tr>
<th>Course</th>
<th>Sample Research and Analysis Methods Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>UXD Studio 1: Fundamentals</td>
<td>Interview, observation, contextual inquiry, affinity diagramming, task flow diagrams</td>
</tr>
<tr>
<td>UXD Studio 2: Screen</td>
<td>Co-design, participatory design, heuristic analysis, probes, experience and user journey maps</td>
</tr>
<tr>
<td>UXD Studio 3: Cross-Channel</td>
<td>Wizard of Oz, service design, anthropometric analysis</td>
</tr>
<tr>
<td>UXD Studio 4: Strategy</td>
<td>Design communication, workflow methodologies</td>
</tr>
<tr>
<td>UXD Studio 5: Specialization</td>
<td>Student-selected</td>
</tr>
</tbody>
</table>

Table 1. Distribution of research and analysis methods across the curriculum.
industry sponsors. Through these experiences, students are encouraged to continuously learn and practice research skills, attending not only to skill acquisition on the course level, but also the progression and deepening of these skills over time. In this way, we have foregrounded the development of students’ instrumental judgment.

DESIGNERS’ UNIQUE SKILL SETS

Methods are but one facet of this puzzle. Teaching methods can easily be interpreted by students as a prescriptive way of doing something without an intentional accounting for what aspects of human experience they intend to explore and what analytic or sense-making lens they employ to abstract the design knowledge and gather insights. As designers, we need more descriptive, exploratory, and generative approaches that value the lived experience and knowledge of individual students. Methods are often weakly taught, particularly when viewed through an instrumental approach, without a commitment towards the unique rigor of design that lies in the designer’s character, identity, and sense of competence (Nelson and Stolterman, 2012). Without taking on this broader role of design education, students may quickly come into conflict with other scientific or scientized disciplines when engaging in early exploratory/generative/evaluative steps that we refer to as “research.” Often, we fall back on adding “sciences” to our work and approaches to make them seem more credible, but we may be better served by learning to better describe and discuss our unique skill set as designers as bound up in our capacity for professional judgment, particularly in relation to research methods.

REFERENCES


» Strategy and Objectives

SESSION GOAL

The goal of this session is to generate discussion about methods-based teaching vs. competency-based teaching, including a discussion of how to cultivate students’ instrumental design judgment. Participants will explore examples, discover new resources, and ultimately create a usable cache of tools and references for those teaching (and learning) design research at various levels within and outside of academia. Examples we discuss can include pedagogical practices for integrating instrumental judgment, as well as curricular models for supporting this kind of competency development across multiple courses.

The session advances the design research community by giving educators resources for integrating instrumental judgment into their courses and their curricular structure.

During the session, participants will explore successful and unsuccessful examples related to teaching design research, and discuss potential iterations to be made to their own courses and curricula.

EXPECTED OUTCOMES

Beyond the benefit of networking with others who are interested in design pedagogy and competency-based assessment, we expect this session to facilitate the
sharing of resources among participants, priming future collaboration efforts. We anticipate concrete steps towards the following outcomes:

- documenting existing means of teaching and assessing design research methods;
- a description of current and aspirational pedagogical approaches that may further support the development of students’ instrumental judgment.

**STRATEGY**

Prior to participating in this session, attendees will be asked to collect and submit 3-5 examples (e.g., syllabi, briefs, exemplars of work) related to teaching design research, with either successful or unsuccessful outcomes. These can include published or unpublished papers or case studies, books, websites, syllabi, project briefs, documentation of project outcomes, games, card decks, or other resources. These may be authored by the participants or may be secondary resources that have been used in a design classroom.

This session will engage conference themes relating to supporting and teaching design research, focusing on the development of students’ capacity for judgment. We plan to use hands-on activities to share and document diverse experiences relating to design research educational practices, using a variety of modes for participation.

» **Timeline & Guidelines**

Friday, September 28th, 10:00-11:50am

**SESSION START** (on the hour or half-hour)

1) Organizer introductions and overview (15 mins)
   Organizers will introduce themselves and the session, including an overview of the activities.

2) Participant introductions (20 mins)
   Participants will introduce themselves and share a brief overview of their connections to the topic of design research and the development of instrumental judgment. Participants will be encouraged to share and briefly overview the artifact(s) that they have prepared.

3) Align and Outline (30 mins)
   Using the artifacts that participants have brought, small groups (organized for diversity of educational experience, discipline, and other relevant factors) will use the Nelson and Stolterman (2012) map of “sets” (knowledge-set, tool-set, skill-set, and mind-set) to map their artifacts and experiences, identifying spaces where instrumental judgment is currently being supported in design curricula. This activity and discussion is intended to identify areas of existing focus, and opportunities for further instructional intervention.

4) Break (5 mins)

5) Report Out (10 mins)

6) Each group will report out on their discussion and findings from the activity, and one or more organizers will take notes to identify spaces to deepen conversation or action(s).

   » Develop and Deepen (20 mins)
   Based on the report outs, teams will be reorganized around emergent themes of interest (e.g., spiral models of instruction, methods for teaching design research, approaches to assessing instrumental judgment development) for further discussion and distillation of resources. Each group will consolidate their findings and potential next steps, to be shared back to the group.

   » Recap and Next Steps (10 mins)
   The organizers will lead a debrief of learnings and action items from the session, including mechanisms for collecting and sharing resources and best practices to the broader design education community.

**SESSION END**

(Last 10-15 minutes before start of next session: create quick flip-chart recaps)
Client-based project work as experiential education: Connecting research to pedagogy

JESSICA JACOBS
Assistant Professor in the Business & Entrepreneurship Department at Columbia College Chicago

For many design educators, the goal of design education programs is to provide students with a “passport to practice.” Client-based studio practice experiences are implemented widely in graphic design curricula in order to help model the real-world practices of collaboration, client service, and design methodology. However, there is a lack of research about the goals and operations of these practicum environments and how they fit into an overall curriculum model.

This workshop will explore the teaching styles and pedagogical practices of educators when they utilize client-based project work in design studio courses. How can we effectively connect research about experiential education and design pedagogy to practice-based design experiences with external clients?

We will use collaborative conversation and curriculum planning activities to work towards the following outcomes:

Part 1: Teaching styles and pedagogy within the design studio
   • Understand differences in typical teaching styles and pedagogical methods in the design studio
   • Identify personal teaching style and pedagogical approach

Part 2: Models for client-based design studios/practicums
   • Differentiate between different models of client-based design experiences
   • Compare advantages and disadvantages of differing approaches
   • Generate list of best practices in experiential education
   • Analyze current curriculum and courses for alignment with best practices

Part 3: Reframing outcomes
   • Assess sample course structures (based on research) to determine connections to principles of experiential education
   • Analyze and revise learning outcomes from existing courses to be in alignment with best practices of experiential education
   • Discuss strategies to create inclusive learning and environments, pedagogy and curriculum within the context of experiential education
   • Develop a framework for a client-based course project that moves beyond a basic graphic design project to include systems-level thinking

» Strategy and Objectives

SESSION GOAL
This workshop will explore the teaching styles and pedagogical practices of educators when they utilize client-based project work in design studio courses. How can we effectively connect research about experiential education and design pedagogy to practice-based design experiences with external clients?

EXPECTED OUTCOMES
This workshop will use collaborative conversation and curriculum planning activities to achieve the following learning outcomes:

Part 1: Teaching styles and pedagogy within the design studio
   • Understand differences in typical teaching styles and pedagogical methods in the design studio
   • Identify personal teaching style and pedagogical approach

Part 2: Models for client-based design studios/practicums
   • Differentiate between different models of client-based design experiences
   • Compare advantages and disadvantages of differing approaches
   • Generate list of best practices in experiential education
   • Analyze current curriculum and courses for alignment with best practices

Part 3: Reframing outcomes
   • Assess sample course structures (based on research) to determine connections to principles of experiential education
   • Analyze and revise learning outcomes from existing courses to be in alignment with best practices of experiential education
   • Discuss strategies to create inclusive learning and environments, pedagogy and curriculum within the context of experiential education
   • Develop a framework for a client-based course project that moves beyond a basic graphic design project to include systems-level thinking
Part 3: Reframing outcomes

• Assess sample course structures (based on research) to determine connections to principles of experiential education
• Analyze and revise learning outcomes from existing courses to be in alignment with best practices of experiential education
• Discuss strategies to create inclusive learning and environments, pedagogy and curriculum within the context of experiential education
• Develop a framework for a client-based course project that moves beyond a basic graphic design project to include systems-level thinking

STRATEGY

This workshop connects to the “teaching design research” theme of Decipher. We will investigate how we understand the teaching of design and how that connects to research about design, learning, and teaching. The nature of this investigation also addresses connections (or lack thereof) between industry, research, and academia.

In addition to the Decipher conference themes, this workshop connects to AIGA’s recently released Designer of 2025. This calls for design educators to examine the principles of their curricula and determine whether they are preparing students for positions in emergent practices within a knowledge economy with growing complexity of contemporary problems. AIGA’s trends include complexity, aggregation and curation, bridging physical and digital experiences, resilient organizations, core values matter, new forms of sensemaking, and accountability for predicting outcomes of design action. In theory, the client-based projects and practicums described in this research should connect to the “resilient organizations” trend and its related competencies of understanding how businesses operate and adapt as well as how they deal with a range of stakeholders and collaboration. Overall, AIGA’s recommendations call for a complex, multidisciplinary design education that is beyond simple design investigations and projects disconnected from multiple contexts.

Through the discussion of our own pedagogical styles and strategies of practicum-based learning, we will also assess our own subject positions with each other and as educators. Pedagogy must be deeply connected to diversity and inclusivity, and this is also an area of inquiry that is lacking in design education research.

» Timeline & Guidelines

SESSION START (on the hour or half-hour)

10:00am Introductions

10:15am Part 1: Teaching styles and pedagogy within the design studio
• Understand differences in typical teaching styles and pedagogical methods in the design studio
• Identify personal teaching style and pedagogical approach

10:45am Part 2: Models for client-based design studios/practicums
• Differentiate between different models of client-based design experiences
• Compare advantages and disadvantages of differing approaches
• Generate list of best practices in experiential education
• Analyze current curriculum and courses for alignment with best practices

11:05am Part 3: Reframing outcomes – 45 minutes
• Assess sample course structures (based on research) to determine connections to principles of experiential education
• Analyze and revise learning outcomes from existing courses to be in alignment with best practices of experiential education
• Develop a framework for a client-based course project that moves beyond a basic graphic design project to include systems-level thinking

11:55 am Concluding thoughts

SESSION END

(Last 10–15 minutes before start of next session: create quick flip-chart recaps)
Bridging Cognitive Bias Gaps within Interdisciplinary Product Teams

MARTIN SIEGEL
Professor of Informatics, Cognitive Science, and Education at Indiana University and Director of Graduate Studies

ELAINE FATH
Game Designer at Schell Games

Keywords
Design Research, Interdisciplinary Teams, Cognitive Bias, Activities, Conversation

THE CHALLENGE OF INTERDISCIPLINARY TEAMS IN COMPLEX ENVIRONMENTS

Today’s designer will be expected to “identify the nature of values and modes of inquiry in various disciplines that contribute to the successful solution of complex design problems” (AIGA, 2017), and this often means recognizing the difference in working styles and definitions of success that each discipline brings. A typical project may include a project manager, software engineers, graphic artists, interactive/experience designers, and a variety of business stakeholders. Differing perspectives can create stronger solutions, but they bring with them a set of biases that can disrupt communication and accepted ways of approaching problems and evaluating research.

CONFLICTING AGENDAS AND MODES OF PROBLEM-SOLVING

Along with potentially more robust and actionable solutions, interdisciplinary teams also have associated costs. Disciplines solve problems using different vocabulary and strategies. The future design practitioner will be required to have “tools, methods, and processes for negotiating among multiple stakeholder groups that have conflicting agendas” (AIGA, 2017). There is a suite of human biases that make every expert more likely to judge what is familiar as valuable and correct (Wikipedia). By extension, this means that in many ways, unless we consciously address these biases, teams are set up to be mistrusting of their teammates’ unfamiliar tools and processes and, ultimately, set up for failure.

Figure 1. Portion of the Cognitive Bias Codex arranged and designed by John Manoogian III. Categories and descriptions originally by Buster Benson (2016).

RESEARCH AS TEAM ALIGNMENT AND DISRUPTOR

Design research in industry settings, at its core, is meant to solve this alignment problem by providing actionable data and insights. The research, used effectively, can help teams recognize communication and ideology gaps, come to a consensus on priorities, and work toward a common goal. However, a major area of friction is the lack of familiarity and buy-in with design research itself. Additionally, what works in one context for a team can cause another team to become more disjointed, or worse, lose trust in design research altogether. Making intentional and informed decisions about what sort of research to do, when, how to frame this research for the team, for how long, and how to use it to its fullest extent is critical for solving these issues. It is the designer’s responsibility to bridge communication gaps in interdisciplinary teams, and research cannot be planned or executed in a vacuum. As such, a robust set of strategies...
for planning and analyzing research alongside teammates and learning to anticipate common biases in each discipline, including design, is non-negotiable.

With so many disparate mental frameworks of research, a design practitioner is likely to encounter a suite of challenges when deciding how to incorporate more qualitative research to identify stakeholder priorities and goals and gather compelling evidence about the state of a design. Each discipline may approach research in different ways. In a sense, alignment is now twofold: alignment in the design solution and in the methods used to reach it. Designers can expect to borrow approaches from all of the disciplines they work with in order to achieve these goals.

**WHAT YOU’LL GET FROM THIS TALK**

Participants will walk away with examples of effectively planned, executed, and analyzed design research. These exemplars, often in the form of stories, will be drawn from industry work as well as class projects. The first part of this talk will be staged as a podcast-style interview between Elaine Fath, an industrial design researcher and practitioner at Schell Games, and Marty Siegel, Professor of Informatics, Cognitive Science, and Education at Indiana University as well as the founder of the UX Design Master’s Program. Elaine will discuss and reflect upon some of her most common design research challenges with interdisciplinary teams at Schell, with insights and additional examples provided by Marty, reflecting on his experience working with design teams from a variety of companies, as well as interdisciplinary student teams. The presenters will share personal experiences of research in practice and biases about the work process, with a focus on the difference between moments where research-related challenges led to more or less team alignment. While Elaine and Marty discuss these topics, participants will be invited to respond with guided questions, comments, and prompts via Twitter, which will be the basis of the second half of the discussion, which will address the most relevant audience questions and concerns. It is the hope that session participants will walk away with a set of example situations in which research tools and methods may help them create, execute, and evaluate design research with interdisciplinary teams, and gain greater team cohesion in the process.

**TOPICS WILL INCLUDE**

An understanding of common cognitive biases of those who work on interdisciplinary product teams, including project managers, UX designers, graphic artists, software engineers, and business stakeholders. · The differences in vocabulary among fields and ways to combat these differences so as to facilitate design communication, consensus building, and goals. · Techniques for helping interdisciplinary teams align their work on the same issue. · How to build buy-in for different kinds of design research.

**PARTICIPANTS WILL BE INVITED TO SHARE THEIR OWN CHALLENGES**

The second half of the discussion will be more roundtable-focused, opening up the floor to participant topics. It will primarily draw from the most-voted-upon questions on Twitter from the first half of the discussion. Interested participants should come prepared to ask questions about and discuss specific design research scenarios and team alignment challenges related to design and design research in particular.

**REFERENCES**


**Strategy and Objectives**

**SESSION GOAL**

Today’s designer will be expected to “identify the nature of values and modes of inquiry in various disciplines that contribute to the successful solution of complex design problems” (AIGA, 2017), and this often means recognizing the
difference in working styles and definitions of success that each discipline brings. A typical project may include a project manager, software engineers, graphic artists, interactive/experience designers, and a variety of business stakeholders. Differing perspectives can create stronger solutions, but they bring with them a set of biases that can disrupt communication and accepted ways of approaching problems and evaluating research.

This session aims to share personal experiences of research in practice and biases about the work process, with a focus on the difference between moments where research-related challenges led to more or less team alignment. While Elaine and Marty discuss these topics, participants will be invited to respond with guided questions, comments, and prompts via Twitter, which will be the basis of the second half of the discussion, which will address the most relevant audience questions and concerns.

The key questions and prompts we will be asking our audience will be requests for a related reflection, comments or further questions after each of our interview questions.

EXPECTED OUTCOMES

It is the hope that session participants will walk away with a set of example situations in which research tools and methods may help them create, execute, and evaluate design research with interdisciplinary teams, and gain greater team cohesion in the process.

We will be collecting tweets from participants in their own words as to how they will address or think about these cognitive biases in team dynamics moving forward, and how that may be different from how they approached these issues in the past.

STRATEGY

We will be using a podcast style interview format in which each presenter will take turns asking each other questions, structured by an accompanying presentation to ensure that we remain on-track and on-time. While we are discussing each of these conversation-starters together, we will be encouraging participants to respond to a related prompt via twitter with a specific handle. The second half of the hour will be responding to the most-loved tweets of participants in the session as well as giving participants the option to ask questions on the fly. It is our hope that this will allow participants to be actively commenting and questioning each part of the conversation on its own, rather than keeping engagement solely to the end of the discussion. It is also our hope that this format will prioritize what is most relevant to the most participants, providing structure to the second half of the conversation. We hope this will also support participants who may be less assertive or want more time to collect their thoughts before asking the question as well as those who would prefer to discuss topics off the cuff.

The themes we hope to focus on are:

1) Identify the nature of values and modes of inquiry in various disciplines that contribute to the successful solution of complex design problems
2) The future design practitioner will be required to have “tools, methods, and processes for negotiating among multiple stakeholder groups that have conflicting agendas”

We will be collecting information in multiple formats, supporting participants who prefer to receive auditory information as well as through reading. Our activities are designed to prevent the loudest voices from crowding out the others.

We believe our strategy for timing is highly feasible--our materials will come with a low-fidelity counterpart and can be changed on the fly to accommodate audience needs, the initial voting activity is designed to focus our interview questions to the ones the audience finds most relevant.

» Timeline & Guidelines

SESSION START (on the hour or half-hour)

0-20 mins:
A podcast-style interview between Elaine and Marty, supported by powerpoint question prompting to keep us on track and on schedule.

While discussion is happening, we also have onscreen
direct asks for our audience: asking for (depending on the question) one example, questions raised, image, or comment on the topic to generate active discussion for the second half. Audience has access to a twitter hashtag during our presentation. Low-fi plan b: prompts will be brought on paper and participants can respond.

20-40 mins
Second half: Elaine and Marty address questions raised on the twitter feed, beginning with the most-voted-upon tweets. Participants in the audience can add to the conversation with additional comments and follow-up questions.

10 mins
Wrap up -- recap. One presenter collects comments on chart paper while the other presenter transcribes on laptop.

SESSION END
(Last 10–15 minutes before start of next session: create quick flip-chart recaps)

Racism Untaught Workshop

LISA MERCER
Founder of Operation Compass

TERRESA HARDWAY
Assistant Professor of Graphic Design at the University of Minnesota Duluth

Keywords
Racism, Diversity, Inclusion, Racialized Design, Pedagogy, Tools and Resources, Social Responsibility

CONTEXT OF WORKSHOP
Diversity and Inclusion are emerging as prominent topics on University campus. In the last few years, multiple institutions of higher learning have outlined diversity and inclusion goals and actions. Some of the challenges they have outlined to address are geared toward advancing campus climate. One common recommendation

Figure 1. Nivea Ad Released 2017
is to “infuse co-curricular programming and services with components that create engaging cultural competence learning opportunities for students” and creating “new courses, curricula, and pedagogy are needed to respond to experiences of underrepresented and underserved students.”

Our goal is to facilitate a workshop on teaching racialized design using design research, to assist in cultivating learning environments for undergraduate and graduate students to further explore issues of race and racism. Using design research methods and processes to solve systemic problems and inspire further work in the public sector or a passion for public service. The following question guides our workshop, how can design professors utilize design research to critically assess anti-racist concepts and solve racialized design problems within project-based learning environments?

This workshop engages with the theme, teaching design research and doing design research.

The workshop theme will be “Racism Untaught” will be focused on:

- Critically analyzing and identifying artifacts of racialized design, (more obvious)
- Shared experiences of microaggressions and implicit bias, (less obvious)
- Systemic forms of racism and how we and our culture perpetuates them. (essentially invisible)

In this workshop we will have:

1) 5 minutes of introduction and project examples,
2) 5 minutes focused racism untaught tools
3) 15 minutes on step 1: context
4) 10 minutes on step 2: define
5) 10 minutes on step 3: ideate
6) 10 minutes on step 4: prototype
7) 10 minutes on step 5: test
8) 15 minutes to report out new projects.

Total: 90 minutes

ARTIFACTS

The discussion will be supported by historical research methods that reveal and define the tropes and archetypes that designers use to perpetuate systems of racism. Throughout history, there have been many examples of the exploitation of people of color and non-mainstream cultures. For example, the ready-mix products by the Aunt Jemima Mills Company made popular for its reference of the “Mammy” archetype icon that parallels a slave persona from the 1800’s “slaving over a hot kitchen stove.” And while there are many historical examples of blatant racism, these racialized designs continue today with examples like the Nivea Ad which implicitly and explicitly perpetuated
a Eurocentric beauty standard (Fig. 1). We will provide examples of designers from the African-heritage, Latinx/Chicanx, Asian, Native American, and allied communities who are using their creative skillset to participate in social justice movements and disrupting societal norms.

EXPERIENCES

Personal experiences have proven to be a key element in empathy building across a variety of disciplines. In fact, real-world storytelling is the first step in the design research process and integral part in understanding the audience the designer is creating for. We plan on introducing this concept through the personal experience of an actual person told via audio with the assistance of a video illustration. The video and audio will serve as a tool to help educators and students alike associate with the experiences of marginalized populations and explores storytelling as a problem framing tool. We’re hoping that hearing stories of everyday racism will help provide support to the historical narrative and assist students as they breakdown how racism shows up in society today. An example of one of our stories, we see how implicit bias plays a role in defining racism.

SYSTEMS

While there are many examples of explicit bias and racism within design, such as the Washington Redskins logo mark, lesser known examples that depict racialized design will also be discussed and broken down. We will focus on racial dogmas that are so ingrained in our culture they are essentially invisible. For example, Robert Moses a prominent Urban Architecture and a person considered to be the “master designer” of our public roadways from the 1920s-1970s, developed a highway system that became the favorable way of developing mass transit. He developed a bridge system that discouraged the use of public transportation. The bridges were built 9 ft tall, not allowing the 12 ft tall public busses to use the highway system in New York City. In doing this, he purposely excluded people of a lower socioeconomic status, mainly people of color, who primarily use public transportation from specific areas of New York City. The second This is a strong example of a systemic social inequality that is still in existence today.

Moses stated, “whites of upper and comfortable middle class would be free to use the parkways for recreation and commuting.”* Racism like this is heavily ingrained in many systems which designers have the power and privilege to help change. An analysis of urban architecture, education, healthcare, and criminal justice systems are just a few to begin conversations about how design research can make positive changes.

PROSPECTIVE AUDIENCE

Participants, working in teams, are expected to work on all three focused areas in planned exercises. Participants will be looking for innovative solutions to incorporate lessons that explore artifacts, systems, and experiences that all have ingrained and implicit racist politics. Design research allows students a period of discovery to employ critical thinking to further understand their own views on these topics. Our goal through these lessons and pedagogy students will create a better understanding of how their making has the ability to perpetuate or disrupt society-driven racist ideas.

POTENTIAL OUTCOMES

We’d like to offer solutions on how these racialized designs can be introduced in undergraduate and graduate classes while allowing critical thought and analysis of our culture. In this workshop we will foster a space to develop tools to create historical contexts, through a case study we provide, that would empower faculty to further understand these concepts. We’d hope that by completing this workshop faculty would leave with the necessary tools to identify, develop, and integrate anti-racist concepts into project-based learning environments. In doing so, this opens the door even wider for interdisciplinary processes to analyze systemic racism. It is our goal that through this process students and professors can be be innovative and inclusive in their work. The period of discovery could include, but will not be limited to, personas, empathy mapping, heuristic analysis of existing work, the human ecology theory, and developing cross-disciplinary and community partnerships. Our plan is to breakdown the project development process by the use of five(5) card decks:

1) Context: Using the terms associated with elements of racism, this deck of cards is used to create context around
the design challenge (artifact, system, or experience) and discuss how racism shows up in the world around us.

2) **Define**: Using methods and theories, the participant used these cards to define how you might solve your design challenge. In doing so, they create a thesis question (“How might design...”) using these guiding statements:
   a) We want to... (use design to)
   b) In order to... (innovate)
   c) With Whom... (stakeholders)

3) **Ideate**: Using an artifact, system, and/or experience, the participant ideates something that will positively impact in their design challenge. Incorporating qualitative and quantitative ethnographic research methods.

4) **Prototype**: The prototype is the development of an artifact, system, or experience from a low-fidelity ideation, mid-fidelity ideation, and to a high-fidelity ideation.

5) **Test**: The participant will define a rubric with a provided worksheet that demonstrates both a mastery of the determined deliverable and the ability to incorporate the methods and processes at an advanced level of understanding.

Participant will leave the workshop with tools and resources to guide projects focused on anti-racism. The aim of the research is to provide design professors with a space to ideate on how to incorporate pedagogy of anti-racist themes into ANY classroom, not only those specifically noted as a course of diversity and inclusion. We hope to learn from participants through successful ideas, or pain points and/or limitations the participants may have with the tools resources we provide and their implementation of them.

We hope this session will enlighten participants on new ways in which students can use design research to identify how systems were created to perpetuate systems of racism and in turn help to dismantle them.

**SPACE AND EQUIPMENT REQUIRED**

- Ideally Minimum of 4 Tables
- Ideally Minimum of 16 Chairs (4 at each table)
- A Projector and Screen to Present Material
- Colored Pencils, Markers, and Post-it Notes

**REFERENCES**


Vijay Kumar, 101 Design Methods (New Jersey: Jon Wiley & Sons, Inc., 2013), pg. 3-7.

**Session Strategy and Objectives**

**SESSION GOAL**

- Specifically, what does your session want to achieve?
  - Our primary goal is to facilitate design educators in cultivating learning environments for undergraduate and graduate students to further explore issues of race and racism.

- How does the goal of the session relates to or advances design research?
  - This session guides design educators who might not use this process in their own work in order to identify Racialized Design—design that perpetuates elements of racism.

- If you are facilitating a workshop, you may want to describe:
  - What are your key learning objectives and how will you achieve them?
    - Understanding Racism
    - Incorporating research methods that provide
empathy for the user and a reframing or definition of the challenge.

— Anti-Racist Applications
  › Ability to develop a low fidelity prototype(s) articulating learned concepts in a non-functioning design solution(s) and test initial idea with users develop a list of key factors asking the questions: what worked, what needs to be improved, are there new ideas, and do you have new questions?

— Critical Thinking
  › Apply key factors gleaned from low-fidelity prototype(s) to your mid fidelity prototype(s) Developing a second set of key factors based off of user testing asking the same or similar questions: what worked, what needs to be improved, are there new ideas, and do you have new questions?

— Justification of Solution
  › Development of a high fidelity prototype(s) providing a proof of concept that addresses real user needs based off of research acquired through low and mid fidelity prototype(s).

— Creating a Final Deliverable based on this process
  › Final artifact(s) as well as a compelling story of the design process.

EXPECTED OUTCOMES

• What kind of outcome(s) do you hope for or expect from this session?
  » Participant will leave the workshop with tools and resources to guide projects focused on anti-racism. The aim of the research is to provide design educators with a space to ideate on how to incorporate pedagogy of anti-racist themes into ANY classroom, not only those specifically noted as a course of diversity and inclusion. We hope this session will enlighten participants on new ways in which students can use design research to identify how systems were created to perpetuate systems of racism and in turn help to dismantle them.

• How will you assess the success of your session?
  » We will learn from participants through successful ideas, pain points and limitations the participants have with the tools resources provided and their implementation of them.

STRATEGY

• What approaches will you use to engage participants to ensure an active session?
  » Our tool kit (cards, worksheet, and rubric worksheet)

• In what way(s) will you address one or more of the conference themes/topics? Which ones?
  » Doing Design Research
  » Dissemination of Design Research
  » Supporting Design Research
  » Teaching Design Research

• How will you address inclusivity in your session to engage participants of all types and abilities?
  » The topic of our workshop is centered on these themes.

• How feasible is your strategy regarding the time you have before and during the conference as well as regarding contingencies during the conference?
  » Very feasible, we’ve already done this workshop once before.
Creating a Balanced, Symbiotic Relationship by Integrating Teaching & Research

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GRETCHEN CALDuell RINNERT
Associate Professor at Kent State University

ANDRE MURNIEKS
Researcher

As an educator, managing the numerous responsibilities of teaching, research and service can be challenging. Relative to other disciplines, design educators are navigating a field where ‘research’ is in its infancy. Adding to this complexity, faculty scholarly activity and research can involve a variety of trajectories, from practitioner-based work, to traditional outlets of academic dissemination. With design education continually advancing, design pedagogy provides ample opportunity for the growth of research. This conversation will revolve around best practices for establishing a research agenda and linking it directly to the classroom. A linear connection develops between research and teaching. This practice allows faculty to enhance and broaden their research capabilities while creating innovative classroom activities, thus, enhancing student learning.

Keywords:
design education, pedagogy research, inquiry-based learning, articulation of research

Our conversation will focus on various themes:

PEDAGOGICAL PRACTICES THAT SHAPE FACULTY RESEARCH:
Discussion on deriving research from the design studio. Specifically, we will share how educators are establishing research agendas within the realm of pedagogy. Investigating how classroom practices, including student learning styles, various critiques strategies, activities, assignments and design thinking techniques, can provide opportunities for research. Reviewing practices for documenting, analyzing
and disseminating data collected in the classroom, and during class field trips, through surveys, interviews, and observational research. Conversations including how to document findings from a research perspective, establishing frameworks and methods, coding data and outlets for dissemination.

**CURRICULAR ACTIVITIES THAT SHAPE AND SHARE STUDENTS’ RESEARCH PERSPECTIVES:**

How do we challenge students’ definition of research in relation to design? Often, students equate research to being solely visual as they gather imagery from Google and Pinterest. How do we broaden student perspectives beyond tacit knowledge of the design process, to equip them with a toolkit of methodologies to be innovative in practice?

Case studies will be discussed of how we are shifting students’ viewpoints on research, specifically in relation to competencies from the AIGA 2025 trends. One method is to adopt an inquiry-based learning approach within the classroom. The instructor becomes a facilitator of learning as the teacher-student relationship shifts to one of equal stakeholders. Studies (Spronken-Smith and Walker 2010) have cited the teaching-research nexus to be strongest when using open inquiry learning, allowing students to take the lead. Most importantly, they concluded if instructors are “co-learners in the inquiry, this helps facilitate an academic community of practice including both academics and students”(p 738). In another example, a design studio class engaged in a research challenge, to design an interactive experience for children based on real-world prompts from the audience. Students conducted observational research of kindergarten and pre-K classrooms, documenting activities and behaviors to inform their designs, and to better understand their user group. Other students interviewed K-12 school teachers to better understand student educational needs and requirements.

During our conversation, areas of emphasis include:

1. Developing research activities for the classroom that are inquiry-based studies
2. Focusing on the audience to allow a deep dive into the user experience
3. Embracing framed and unframed design problems
4. Research as a means of generating a visual language
5. Community-based design projects, consulting and collaborating with other disciplines in research investigations

**ARTICULATION OF RESEARCH IN ACADEMIC REPORTS:**

How do we best present ourselves to our colleagues, chairs, directors, deans and provosts? We are often at the mercy of administrators, that may or may not have a background or experience with design researchers. In order to succeed we need to position our research in a way that shows the impact and value of not only our work, but of the professional practice of design. We will discuss crafting reappointment paperwork, tenure and promotion materials and knowing how to classify and defend the importance of design research.

**CONCLUSION**

We have found these techniques are beneficial in seeking tenure and promotion, while also creating a balanced and symbiotic relationship between research and teaching. This type of structure allows students a window into the professional world, with direct access to first-hand knowledge, expert advice, along with methods for working more efficiently, and creating a successful research practice. It also allows the educator to share their design passion while shining a light on design research for undergraduates, which may entice some to pursue more advanced design learning. As we balance between the two different roles, straddling the professional design world and academia, allowing the classroom to become a design lab.

**REFERENCES**

Strategy and Objectives

SESSION GOAL

Today’s designer will be expected to “identify the nature of values and modes of inquiry in various disciplines that contribute to the successful solution of complex design problems” [AIGA, 2017], and this often means recognizing the difference in working styles and definitions of success that each discipline brings. A typical project may include a project manager, software engineers, graphic artists, interactive/experience designers, and a variety of business stakeholders. Differing perspectives can create stronger solutions, but they bring with them a set of biases that can disrupt communication and accepted ways of approaching problems and evaluating research.

This session aims to share personal experiences of research in practice and biases about the work process, with a focus on the difference between moments where research-related challenges led to more or less team alignment. While Elaine and Marty discuss these topics, participants will be invited to respond with guided questions, comments, and prompts via Twitter, which will be the basis of the second half of the discussion, which will address the most relevant audience questions and concerns.

The key questions and prompts we will be asking our audience will be requests for a related reflection, comments or further questions after each of our interview questions.

EXPECTED OUTCOMES

It is the hope that session participants will walk away with a set of example situations in which research tools and methods may help them create, execute, and evaluate design research with interdisciplinary teams, and gain greater team cohesion in the process.

We will be collecting tweets from participants in their own words as to how they will address or think about these cognitive biases in team dynamics moving forward, and how that may be different from how they approached these issues in the past.

STRATEGY

We will be using a podcast style interview format in which each presenter will take turns asking each other questions, structured by an accompanying presentation to ensure that we remain on-track and on-time. While we are discussing each of these conversation-starters together, we will be encouraging participants to respond to a related prompt via Twitter with a specific handle. The second half of the hour will be responding to the most-loved tweets of participants in the session as well as giving participants the option to ask questions on the fly. It is our hope that this will allow participants to be actively commenting and questioning each part of the conversation on its own, rather than keeping engagement solely to the end of the discussion. It is also our hope that this format will prioritize what is most relevant to the most participants, providing structure to the second half of the conversation. We hope this will also support participants who may be less assertive or want more time to collect their thoughts before asking the question as well as those who would prefer to discuss topics off the cuff.

The themes we hope to focus on are:

1) Identify the nature of values and modes of inquiry in various disciplines that contribute to the successful solution of complex design problems

2) The future design practitioner will be required to have “tools, methods, and processes for negotiating among multiple stakeholder groups that have conflicting agendas”

We will be collecting information in multiple formats, supporting participants who prefer to receive auditory information as well as through reading. Our activities are designed to prevent the loudest voices from crowding out the others.

We believe our strategy for timing is highly feasible--our materials will come with a low-fidelity counterpart and can be changed on the fly to accommodate audience needs, the initial voting activity is designed to focus our interview questions to the ones the audience finds most relevant.
» Timeline & Guidelines

SESSION START (on the hour or half-hour)

11–11:10
Gretchen, Jillian, and Andre
Present presentation

11:10–11:15
Gretchen
Provide outline for creating a “potential research network.” and smaller breakout groups. Also, materials and reflective questions will be provided.

11:15–11:30
Group Work Time
Participants break into small groups and work on their network maps / respond to prompts. Signal when there is a five minute warning to have group compose thoughts. Gretchen and Jillian will record the activity at this time.

11:30–11:45
Jillian, Gretchen
Jillian lead group discussion to report on findings, all groups share and discuss. Activity will be recorded in both photo and video formats.

11:45–11:50
Jillian and Gretchen
Session Recap, provide link to post-survey URL

SESSION END
(Last 10–15 minutes before start of next session: create quick flip-chart recaps)

Identifying and Fostering New Connections with the Public Sector at the Federal Level

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BENJAMIN WINTER
Designer, Strategist, and Educator at The Lab at the US Office of Personell Management (The Lab at OPM)

Keywords
Government, Federal Government, Public Sector

BACKGROUND ON THE WORKSHOP PLANNERS

The Lab at OPM is practice within the United States federal government that fosters innovation through human-centered design. We build capacity and capability for human-centered design across the Federal Government through partnerships with federal agencies and others that blend classroom-based and project-based engagements. We build awareness and understanding of this rich discipline by demonstrating new applications of design broadly (and design research in particular) in the government space by working with our partners to improve the policies, programs, processes, services, and more in order to address complex public and cross-sector challenges.

Through our work, The Lab at OPM reveals, builds and fosters the ecosystem of design and innovation across the government. Thus we are committed to using our knowledge of that complex system to create new connections and make existing connections stronger. This open dialogue between government and the broader design community is needed in order to define the needs and value of design within this context. To do that, we work to invite and engage a wide range of stakeholders to join that effort. This workshop affords an exciting opportunity to do just that.

DECIPHER THEMES

This workshop will respond to a number of the Decipher themes, with a particular emphasis on Disseminating Design.
Research and Supporting Design Research. As a design-led experiment itself, The Lab at OPM is continuously exploring the potential of design research within the federal context. Design research in the federal government is represented by a spectrum of knowledge and applications all at various points of maturity.

This workshop will touch on a number of Decipher topic areas relevant to The Lab’s work and design research in the government context:

- Doing Design Research
  » Tacit & explicit knowledge and skills needed for design research
  » Diversification of the design discipline through research (in terms of cultural perspectives, disciplines, access)
- Disseminating Design Research
  » Advocating for design and design research agendas within the context of larger interdisciplinary projects or research groups
  » Sharing design research across channels that engage diverse audiences (in terms of cultural perspectives, disciplines, access)
- Supporting design research
  » Gaining institutional, peer & industry support for research
  » Expanding opportunities for who gets to participate in research
- Teaching Design Research
  » Bringing research to the classroom by connecting one’s design research agenda to curricular activities
  » Research intersections between academia and industry

PLANNED ACTIVITIES AND LEARNING OUTCOMES

We will begin by sharing key elements of existing partnerships between academic programs and federal entities working within the field. In particular, we will dive into the story of a two year partnership between NASA and students and faculty at the Parsons Transdisciplinary Design Program. In this example, a NASA scientist engaged with a Parsons studio class titled “From big science to citizen science and beyond: reframing citizen engagement with urban climate systems.” One intention behind this effort was to identify potential new use cases for data that will be collected by TEMPO, the first Instrument from NASA’s Earth Venture Instrument Class Series, which will “measure air pollution of North America, from Mexico City to the Canadian tar/oil sands, and from the Atlantic to the Pacific, hourly and at high spatial resolution.”

Over a decade in the making and scheduled to launch in 2019, the TEMPO instrument has been developed with particular intentions in mind. Yet the NASA team recognized a greater potential set of use cases and was willing to invite students who were novices to the science to learn about this work and offer new insights.

In the beginning, this collaboration was possible because an invitation was both offered and acted on. Team members from The Lab at OPM invited Parsons faculty to suggest agencies or areas of federal work they wanted to engage with but were unsure how to access. The Lab then sought out potential connections, shepherding it through the “first mile” of that exploration. In a system as complex as the federal government, that is a role we are uniquely suited to play and one we are eager to do more often.

This partnership has run for two full terms now, and those involved are in the process of reflecting on the experience and identifying the value it has offered on many levels. In addition to understanding the value derived from this specific interaction, we will explore the factors that both made it happen and that made it work- what pushed it from “It would be great if...” to “We are doing this!”

In the weeks and months following this workshop, The Lab at OPM will work to explore, identify and foster connections where we can to make new collaborations possible. Outputs from this session will feed into a Government Innovation Forum that The Lab at OPM is crafting for late October/early November 2018. We expect 100-200 people from the U.S. federal Design and Innovation community to participate. The Government Innovation Forum would include a matchmaking component where the interests expressed at Decipher are then shared with that audience to identify potential connections. As we are doing with the NASA/Parsons story, as those new connections take root, The Lab at OPM will then work to share those stories publically.
Decipher Session Strategy and Objectives

SESSION GOAL
Leveraging The Lab at OPM’s unique experience as an advocate and intermediary between the US Federal government and global design community, this session will give design researchers and practitioners the informed confidence and actionable opportunities they need to pursue collaborations with public-sector partners. Ultimately, by expanding meaningful interaction and dialogue between civic-minded designers and government institutions, the aim is to deepen understanding, effectiveness, and impact on both sides.

IDEAS:
• Democratic governance and public service would seem to be ideal subjects for design researchers practical obstacles and perceived barriers to entry...
• Characterized by action, creation, and change, design—and by extension, design research—require access to situations or domains that call for innovation and transformation.
• The public sector poses some of the most complex and compelling design challenges around, and public servants and policy makers have long sought solutions in this space without the benefits of strategic design practices or perspectives...

TIMELINE AND GUIDELINES
2:00pm-2:15pm - Introductions to each other and The Lab at OPM
• Facilitators introduce themselves and their work at The Lab at OPM.
• Participants are asked to say their name, where they are coming from, and what interest or experience they have in collaborating with government.

SUMMARY OF ACTIVITIES
During this workshop, we will:
• critique The Lab at OPM’s current ongoing work to identify and visualize where design-focused efforts are already underway in the federal government
• share a specific example of a collaboration between government and academia and identify initial insights about what we can learn from that collaboration with regard to fostering new collaborations in the future (i.e. What are the enabling elements that foster and sustain cross-sector collaboration?)
• explore, discuss and capture participants’ insights about the enabling elements. (These insights will inform how we approach fostering new potential collaborations with workshop participants.)
• invite participants to define their interest in new partnerships with government, criteria for those relationships and potential for their involvement in cross-sector collaboration.

INTENDED AUDIENCE
Members of the Design Research community interested in engaging with the individuals, programs, and missions of the U.S. federal government to identify and form new, mutually beneficial collaborations.

OUTPUTS THAT WILL CONTRIBUTE TO KNOWLEDGE BEYOND THE SESSION
• New, richer cross-sector collaborations with federal agencies driven by specific invitations for collaboration that are expressed and refined during the workshop
• Stories/case studies of those collaborations as they emerge
• New visualizations of the innovation and design-focused ecosystem within the U.S. federal government intended to improve access to and engagement with that ecosystem

LOGISTICS:
Ideal session length would be 3-4 hours. The room should have a flexible set up with small groups at round tables. AV needs are simple- the ability to project slides and possibly to play audio, though audio is not a requirement.
2:15pm-2:30pm - Proposition of design as an invitation to engage with government

- Facilitators propose that there are greater opportunities and fewer obstacles for designers to work with the Federal government than might be expected.
- Examples of connections that The Lab at OPM has helped to make between the public sector and broader design community are presented, including a case study of a partnership between NASA and Parsons School of Design.
- During this presentation, participants are invited to ask questions, make relevant comparisons to their own work, and take note of the different value exchanges taking place in the examples and case studies presented.

2:30pm-3:00pm - Identification and articulation of public-design value exchanges

- Facilitators provide a list of Federal government agencies and interagency innovation teams for participants to consider.
- Participants are asked to work in pairs to imagine potential value exchanges that could result from projects or partnerships between design researchers or practitioners and various Federal agencies (such as themselves or others).
- Facilitators highlight patterns and record value exchanges as participants briefly share and discuss their ideas with the larger group.

3:00pm-3:30pm - Consideration of government norms and creation of proposals

- Facilitators present common protocols and constraints of design and innovation projects in government (e.g. agreement types, calendar milestones, political/privacy regulations) for participants to consider.
- Participants are challenged to incorporate these practical considerations into a brief design or research proposal for a specific government agency or group.

3:30pm-3:50pm - Presentation and critique of potential partnership proposals

- Participants are invited to share and discuss their project/partnership proposals and submit them for The Lab at OPM to promote across their network.
- Facilitators draw out promising elements and themes from participants’ proposals, make recommendations for refinement, and suggest next steps for making introductions and brokering connections.
- Note: In the week and months following this session, The Lab at OPM will work to identify relevant points of contact for the potential collaborations identified and will work to foster those connections to see where they might lead.

SESSION END

(Last 10–15 minutes before start of next session: create quick flip-chart recaps)
Principles of Practice for Designing with People: Exploring Ethical Frameworks, Mindsets, Values, Knowledge and Skills for today’s Design Researchers.

PAMELA NAPIER
Assistant Professor of Visual Communication Design at Indiana University, Herron School of Art and Design

TERRI WADA
Practitioner and educator of Design Thinking and Design Research

SEAN DONAHUE
Co-founder and Core Faculty of Art Center College of Design

Gwynne Keathley
Vice Provost for Research and Graduate Studies at Maryland Institute College of Art

Keywords

This session aims to enable participants to work together on questions around design research and ethics and intends to utilize a series of workshop activities to collectively explore and articulate various mindsets, values, knowledge and skills that contemporary design researchers need when engaging with people.

Building on efforts of design educators and scholars from institutions across the US, this session will contribute to and expand a national dialogue focused on developing Principles for Practice, Ethical Frameworks, Educational support and Resources for how to engage with people as part of a design process.

There is an opportunity to elevate designers and the expanding roles they now play as thought leaders, innovators, and change makers across an increasing array of disciplinary boundaries. Teaching and practicing participatory, people-centered design research enables emerging designers to develop new sets of skills and accountable practices that will allow them to ethically and responsibly operate within the dynamic and growing areas of design and the broader array of communities they engage with.

This session aims to broaden the discourse and discipline of design by inviting participants to participate in and contribute to a dialogue about a number of increasingly important practices, support mechanisms, and frameworks for cultivating the appropriate knowledge, mindsets, values and skills for today’s design researcher.

We seek to engage participants in emerging issues, ethical imperatives, needed resources, and national priorities in regards to design research and aim to contribute to an evolving map of design practice and design research.

REFERENCES


Donahue, Sean. “Discipline Specific Ethics: An Exercise in Praxis.” Design
Strategy and Objectives

GOALS

DONAHUE & KEATHLEY
This activity group session will focus on working together with participants to identify and advance the issues around design research and ethics particularly as it relates to engaging people as part of the design endeavor. With the goal of initiating a national discussion that gathers resources, best practices and examples to support design and design education to advancing responsible practices for designing with people.

EXPECTED OUTCOMES

Participants will:

• Map the landscape of emerging questions
• Prioritize the Issues
• Collect and share classroom examples/exemplars
• Define shared/needed Resources
• Articulate National Priorities

NAPIER & WADA
This activity group session aims to advance the area of design research by further exploring what mindsets, values, knowledge, and skills are needed for design researchers today.

The goals for this session are to:

1) To create a coalesced synthesis of identified mindsets, values, knowledge and skills for today’s design researcher; and
2) Create visual and evolving maps of “Design Research”

EXPECTED OUTCOMES

Participants will:

• Map the landscape of Emerging Issues around the Ethics of Engaging People through Design
• Share classroom examples/exemplars
• Define shared/needed Resources/Paths Forward
• Articulate National Priorities
• Explore and share their current understanding of existing (and needed) mindsets, values, knowledge, and skills of/for design researchers, through generative activities and verbal and visual communication.
• Visualize how design researcher mindsets, values, knowledge, and skills overlap/intersect/connect with a current evolving visual map of design research.
• Create their own version of a visual map of design research through lo-fidelity visualization.

STRATEGY
Our Activity group session will utilize a series of hands-on workshop based activities to collaboratively and collectively articulate, synthesize and visualize. Our activities will utilize generative design tools to enable participation, inclusivity and conversation. We and our participants will consider questions ranging from — How do we create a scaffold of experiences that introduces & progresses students through the issues of a 21st Century design research practice? What are the institutional resources need to support responsible engagements with people? Lastly, what would a shared support resource for design educators, students and administrators need to offer and look like?

» Timeline & Guidelines
SESSON WORKSHOP START (2:00pm) (really 2:05)
1) Introductions - Individuals (2:05 - 2:08) (3 min)
2) Frame the Session (2:08 - 2:15) (7 min)
   » Introduction - Topics to explore
   » What we want to achieve today
   » How we plan to do that
   » Session Breakdown
3) BREAKOUT GROUPS (2:15 - 3:15) (60 min total) (4 small groups / rotating through / 15 min long sessions)
   » BREAK OUT GROUP 1 (15 min) x 4
   » Mapping the Landscape / Current Conditions
   » BREAK OUT GROUP 2 (15 min) x 4
   » Understanding Behaviors & Experiences
   » BREAK OUT GROUP 3 (15 min) x 4
   » Framing Insights & Challenges
   » BREAK OUT GROUP 4 (15 min) x 4
   » Collecting Case Studies from the Classroom
4) FOCUSED WORKSHOPS (3:15 - 3:30) (15 min total) (2 groups / run concurrently)
   » FOCUSED GROUP 1 - Ethical Frameworks (15 min)
     » Identifying Shared/Needed Resources (5 min)
     » Articulating & Prioritizing the issues (7 min)
   » FOCUSED GROUP 2 - Mindsets, Values, Knowledge & Skills (15 min)
     » Ideating & Iterating
     » Share & Reflect
5) Large group share and reflect (15 min) (3:30 - 3:45)
6) Q&A / Next steps / Contact Info (5 min) (3:45 - 3:50)

SESSION WORKSHOP END (3:50pm)
FACILITATOR RECAP/Summary TIME
(3:50-4:10) (really 4:10 - 4:30)
(10-15 minutes before start of next session)
• create quick flip-chart recaps
In What Ways Do Critical Practices (Re)Invigorate Design Research?

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Professor of graphic design at the University of Minnesota

JESSICA BARNES
Associate Professor of visual communication design at Kent State University

DANIEL JASPER
Associate Professor of graphic design at the University of Minnesota

REBEKAH MODRAK
Associate Professor of art and design at the University of Michigan

Keywords
critical design, critical making, scholarship through critical practice, disciplinary legitimacy

CONTEXT
“Critical practices” in design refers to a range of approaches and terms: critical design, critical making, digital humanities, design fiction and design authorship, for example. “Involving a speculative approach to design (experimental, expressive, future-oriented), critical practices combine an authorial point-of-view with research and the tangible aspects of media, technology, materials, and process” (Barness & McCarthy, 2017). Critical practices often involve “pre-search,” as they establish both a topic of inquiry and a discursive method for investigation, commentary or activism. These practices involve modes, methods and processes; resulting prototypes may serve as types of primary research in that they can addresses research questions in theoretical terms. Despite this, critical practices have not yet been thoroughly investigated (as basic or applied types of research, for example) in the context of design research agendas or academic culture at large.

RESEARCH QUESTION
In what ways are “critical practices,” studio-based forms of inquiry and commentary, legitimate types of design research, and what do they reveal about design questions and disciplines?

CONVERSATION FORMAT
The four Conversation convenors will each make a 3–5 minute visual presentation of their creative work, setting up a context for the Conversation. With disciplinary backgrounds in design, rhetoric and art and with international dissemination through publications, presentations, screenings, exhibitions, collections, social media, interactive environments and entrepreneurial ventures, the convenors bring diverse approaches to the topic. After this visual introduction, convenors and participants will discuss challenges and opportunities in various academic cultures regarding the perception of critical practices as design research. Strategies and ideas will be shared and questions invited from participants. The Conversation will discuss past and current critical practices and have participants strategize about the creation of potential critical projects and their uses. A secondary outcome will be the discussion of venues for dissemination – as academics, what are the opportunities for scholarship resulting from this form of speculative making?

REFERENCES

FIGURES
Illustrated works and captions by each of the four Conversation convenors follow. All of the works have been disseminated in juried venues (exhibition, presentation, etc.) and theorized about in peer reviewed publications.
JESSICA BARNESS:


Unbroken Record is a book that “undigitizes” an extended family’s text and email messages over a year and a half as a mediation between privacy and access, archiving and forgetting, message and medium. Unbroken Record also has an essay titled World Building in a Crazy World: Our Digital Crisis by Jonathan Harris (used with permission) printed line-by-line on the fore-edge. Printed in an edition of fifty books, Unbroken Record has been exhibited in several juried venues and has been acquired by special collection libraries nationally, including those at Columbia University, UCLA, the University of Washington, the Phoenix Public Library and Hennepin County Library in Minneapolis.
Wee Go Library is a mobile cabinet of 22 books altered through collage methods. The books were taken from Little Free Libraries in the Twin Cities metro area to comment on the notions of community, distributed networks and the book as object and system. Each book is mapped to its donor library source and geographic location by a small pamphlet. The Wee Go Library project has been presented at the Political Imagination and the City: Processes and Collective Practices in Architecture and Design conference in Santiago, Chile, at AIGA Converge, and published in the refereed journal Communication Design: Interdisciplinary and Graphic Design Research. McCarthy was also awarded the 2017 Minnesota Book Artist Award for Wee Go Library.

Project Binary is an artist’s book in an edition of four that examines some of society’s assumptions about binary relationships: social, political, religious, economic, gender, racial and so on. Each page features a photograph of a person modeling a garment with people’s faces and descriptive terms sewn onto it. The back of each garment has a slur literally cut into the fabric as an example of intolerance. Project Binary’s pages are printed onto fabric, stuffed with batting, stitched into thirteen leaves and bound with wood and metal bolts (fabric artist and apparel designer Anna Carlson assisted creatively and technically). Project Binary was supported by an Artist Initiative visual arts grant provided by the Minnesota State Arts Board. Two copies of the work have been acquired by the University of California (Berkeley and Riverside campuses) and it has been exhibited at the nationally juried Project Passion show.
DANIEL JASPER:
Elements of Interrogation Style. Book.

Elements of Interrogation Style combines the text of the Bybee Torture Memo with the structure and layout of Robert Bringhurst’s ‘Elements of Typographic Style’. Jay Bybee was Assistant Attorney General in the Office of Legal Council in the United States Justice Department for the Bush White House from 2001 to 2003. Bybee’s memo was written at the request of the CIA who wanted authority to conduct more aggressive interrogations of suspected al Qaeda captives after the 9/11 terrorist attacks. Presented here in its entirety is the document that emerged from those deliberations entitled “Standards for Conduct for Interrogation under 18 U.S.C. sections 2340-2340A”, AKA The Bybee Torture Memo.

Depth From Above. Wallpaper. Inspired by 1970s era Art Deco revivals the title describes an aerial view of flag-draped coffins that stretch into infinity. The name is taken from the U.S. Army 101st Airborne Division motto ‘death from above.’
Tulips On Missiles. Wallpaper.
Tulips and Hellfire missiles form a diagrammatic Arabesque. Tulips have great symbolic significance within many Islamic cultures. Hellfire missiles are those commonly fired by American drones, often within Muslim countries.

Moussaoui Grotesk. Typeface & website.
Moussaoui Grotesk typeface is derived from the handwriting of ‘The 20th Hijacker’ Zacarias Moussaoui. Moussaoui was arrested in Minnesota while taking flight training classes, allegedly in preparation for the September 11th attacks on New York City and Washington DC. Moussaoui, who defended himself at trial, wrote by hand numerous memos and court briefs with titles like ‘God Curse the Queen: The Little Bitch of Buckingham.’ There are two members in the Moussaoui Grotesk font family: Moussaoui Grotesk Display Caps and Moussaoui Grotesk Curseive. Moussaoui Grotesk Display Capitals are a faithful recreation of Moussaoui’s block printing. He reserved this writing style for his most emphatic messages. Moussaoui Grotesk Curseive is inspired primarily by handwriting samples taken from notebooks and memo pads Moussaoui used while in flight training classes at Pan Am International Flight Academy in Eagan, Minnesota, where he trained on a Boeing 747 flight simulator in August, 2001.

FOR FURTHER READING / VIEWING, SEE:


Strategy and Objectives

SESSION GOAL

- The goal of the “conversation” session is twofold: 1. to demonstrate, through examples of the conveners, successful scholarly products (ranging from published papers, exhibited works, awards, etc.) that employ critical practices; and 2. to engage the participants in a robust dialog about how critical practices can enhance their own scholarly agendas while serving to advance disparate concepts of design research.

EXPECTED OUTCOMES

- Positive audience reception of the short convenors’ presentations as evidenced by applause, gasps of joy, blissful nods and even skeptically furrowed brows.
- Participants’ follow-up questions, as delivered via paper airplanes (quantitative and qualitative assessment of the planes’ aerodynamics will be used to measure participant engagement), will help determine receptivity of the conversation topic.
- Interest in further dialog and in resource sharing will be another indicator of success.
- Long-term outcomes include greater productivity in critical practices circles: specialized exhibits and other presentation venues, new journals or receptivity of existing journals to publish critical works, acceptance of critical practices as legitimate forms of scholarship, etc.

STRATEGY

- The variety of critical practice approaches by the conveners will demonstrate diverse approaches: aesthetic, discursive, technological, topical, etc. Their records of success in getting their work into juried and blind-reviewed venues demonstrates rigor and commitment to critical practices. Sharing this will hopefully inspire others.
- By engaging participants in a robust dialog of their own making (literally, though writing questions on paper airplanes!), the session promises to be inclusive, inspirational and lively. The facilitator is an experienced presenter (nationally and internationally) with an approach to public presentations that is empathetic, entertaining and informative. Decipher Session Timeline & Guidelines

» Timeline and Guidelines

2:00
SESSIO:N START: Introduction of panelists by S. McCarthy

2:05
Presentations by four convenors (3–5 minutes each)

2:25
Guiding questions / discussion prompts by convenors.
1) What are the opportunities for scholarship resulting from speculative making in design?
2) How might critical practices in design achieve parity with more established forms of scholarship?
3) Why are critical practices relevant to the future of design research?

Participants are encouraged to submit questions for discussion by flying paper airplanes to facilitators. Paper will be provided.

2:45
Recap and next steps, resources

2:50
SESSION END
Engaging Design Students in Value Discovery as “Everyday Ethicists”

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SHRUTHI SAI CHIVUKULA
Doctoral Student

Keywords
Ethics, values, pragmatist ethics, design character, design methods

INTRODUCTION
In creating the not-yet-existing (Nelson and Stolterman, 2012), the designer takes on a substantial weight of responsibility not only for the present use of a designed artifact or experience, but also the potential futures that these artifacts or experiences may potentially embody (e.g., Gray and Boling, 2016; Verbeek, 2006). In this way, design activity can be viewed as always already being linked to social change, mediated through the character of the designer (Nelson and Stolterman, 2012). In this conversation, we seek to explore how design activity—and in particular, the education of designers—might celebrate this ethical responsibility as a form of activism that inherently celebrates and embodies a certain set of social values, while simultaneously excluding other possible social values. We advocate for a repositioning of the role of values and ethics in relation to design activity, seeing ethical concerns not as a constraint or barrier to action, but rather as a generative driver of design concepts (c.f., Lloyd, 2009; Shilton, Koepfler, and Fleischmann, 2014) through the process of value discovery.

Prior to participating in this conversation, organizers will ask attendees to identify and share resources relating to ethical or unethical design practices, including design methods or instructional tools that scaffold design students’ awareness of ethical responsibility.

Possible outcomes include:
1) potential methods to encourage value discovery;
2) a description of pragmatist ethics in relation to design identity and character; and
3) connecting points for practitioners and educators in relation to ethics and values.

A CALL FOR ETHICAL RESPONSIBILITY
van Wynesberghe and Robbins’ (2014) describe a new role for ethicists in the science and engineering lab, demonstrating how philosophical skill might be productively translated into design activity through the role of ethicist-as-designer. We draw inspiration from this shift, wondering how designers might be productively viewed as “everyday ethicists.” This call for attention to ethics aligns well with AIGA’s Designer 2025 (AIGA Design Educators Community, 2017), particularly in relation to the “Core Values Matter” trend, and represents an important space for further attention. We envision ethics and values to be a central point of departure for design activity, serving a mediating role in the designers’ judgments, and as an overall expression of their design character (Gray and Boling, 2016; Nelson and Stolterman, 2012).

In the past two decades, concerns regarding ethical behaviors have become increasingly central to design education and practice (e.g., Findeli, 2001; Moore, 2014). While ethics has become central to other disciplines such as engineering in this same time frame, many of these efforts tend to rely on consequentialist or deontological views of ethics that primarily seek to curtail or limit design activity. In contrast, we are interested in further developing a space for pragmatist ethics, recognizing the situationality and social complexity of design activity. Drawing from the pragmatist philosophy tradition, we wish to explore the potential role of the designer as activist and emancipator through the consideration of ethics in a generative stance.

POTENTIAL VALUE DISCOVERY PRACTICES OF THE “EVERYDAY ETHICIST”
Building on Verbeek’s concerns about the ethics that are inscribed into the artifacts and experiences that designers create, we see the pragmatist role of the designer as being revealed through value discovery in the design process itself. Thus, we wish to call greater attention to a range of potential value discovery methods that may reveal design possibilities,
potential futures, and hazards in a generative stance. While
a range of methods currently exist, such as value sensitive
design (VSD) or Albrechtslund’s (2007) phenomenological
expansion of Don Ihde’s concept of multistabilities, most of
these methods either tend to be overly prescriptive while not
being resonant with the needs of designers in practice [e.g.,
VSD], or tend to be overly philosophical and difficult to enact
[e.g., multistabilities].

CONCLUSION
We envision a substantial opportunity for identifying and
developing design methods that encourage value discovery
throughout the design process, while remaining lightweight
enough to serve a generative and constructive role in the
hands of a competent designer. We anticipate that this
conversation may lead to the identification of new candidate
methods to reveal values and ethically-related concerns,
clearly positioning the designer as an “everyday ethicist” in
their practice.

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Let’s Play Together: Creating Games for Cohesive and Diverse Design Research Teams

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Keywords
Team-Building, Intercultural Collaboration, Cultural Awareness, Co-production

Participants will create games for engaging diverse design research teams in a variety of collaboration and co-production activities.

SESSION OVERVIEW

This activity group weaves research in intercultural design collaboration together with lighthearted game play into a session where participants develop games to build diverse and effective design research teams. ‘Play’ and ‘fun’ can be valuable methods for engaging students, faculty, community members, and other constituents in design research-through-making and redefine what it means to work with designers. Participants will create an analogue multiplayer game to engage creative teams in a variety of co-working activities based on target areas identified in the authors’ research, such as communication, accountability, ownership, evaluation and critique, role assessment, assigning tasks, and sharing and working with each other’s project components (ideas, files, etc.).

The session will be highly interactive and hands-on: participants will work together to gain a deeper understanding of how to use game-based elements and principles to aid the work of multicultural design teams. Students, educators, and practitioners engaging in these activities will prototype playful exchanges that can help make design teams more productive and inclusive. “The whole idea of play is to give the player an experience without the danger that might normally accompany that experience” (Crawford, 31). Co-facilitators Denielle Emans and Kelly Murdoch-Kitt have been research partners since 2012. Their research produces methods for effective intercultural design, responding to the design discipline’s need to open up, decolonize, and become less biased, challenging its roots in the Bauhaus and other primarily Eurocentric, male-dominated origins.

A CASE FOR INTERCULTURAL COLLABORATION

Our world is full of big, messy problems that can’t be solved by working within one narrow perspective. Professional and personal environments increasingly call for intercultural skills to better communicate across global organizations, work with clients in other countries, and foster friendships with international community members. Nearly 40% of respondents to 2014 U.S. Business Needs for Employees with International Expertise, a survey of 800 executives in U.S. companies, said that a “lack of internationally competent personnel” caused their companies to miss out on business opportunities. Beyond business, as producers of culture,
designers understand and value the ability to see problems differently, a capability that is intensified in the process of intercultural collaboration.

METHODOLOGY AND INITIAL FINDINGS

Based on the authors’ qualitative study of design professionals across the United States, respondents cited the need to support design research processes and outcomes by expanding opportunities for participation and inclusion to a more diverse set of constituents and designers [Emans and Murdoch-Kitt, 2017]. This initial study of design professionals underscores the idea that the practice of research-informed design and design-as-research is not a solitary effort, and should acknowledge culturally significant ways of thinking and making. Instead, design-led research involves constituents of all types, at every stage of this reflective practice.

These findings are in alignment with the work of Truelove, Brandeau, Lineback, and Hill, which discusses how increasing teams’ diversity and differences leads them to cultivate a type of positive friction, which she terms “creative abrasion” [2014]. Friction may sound uncomfortable, but turns out to be a boon for design teams as they work to establish a marketplace of ideas to generate, refine and evolve a multitude of options through discourse, debate and even conflict. Potential solutions emerge from this process; they almost never spring complete from a solitary mind in a mysterious flash of insight” (p. 118).

The authors’ qualitative study indicated a need for designers to cultivate interpersonal competencies in order to navigate the international workforce and be responsible and respectful global citizens. As such, the authors’ design classrooms in the Middle East and North America serve as a laboratory to develop, test, refine and iterate collaborative methods. These experiences aim to better prepare the future design workforce to excel at long-distance collaborations across the globe.

Since 2012, the authors have used a grounded theory approach to progressively analyze and compare observations and other findings. The ongoing methodological research uses the constructive-developmental paradigm theory to frame how individuals’ understand their own growth and development over time, and how this relates to others, in alignment with their intercultural learning experiences (Magolda, 2004).

In developing these methods, another noteworthy finding is that students do not always view creative abrasion as a positive force or route to innovation. Working across cultures presents a multitude of challenges that can stand in the way of a team’s desire to create something new together. Some key areas of potential friction for intercultural teams, as identified in this research, include communication, accountability, ownership, evaluation and critique, role assessment, assigning tasks, and sharing and working with each other’s project components (ideas, files, etc.).

NEXT STEPS: USING PLAY TO OVERCOME COMMON HURDLES

How can we use ‘play’ to better engage design research teams working outside of their comfort zones (in terms of cultural differences, privilege, power) and dealing
SESSION OUTCOMES

The hands-on, accessible nature of this session will enable small groups to develop an analog, multiplayer game that can be used to support creative co-production. Participants will:

- Learn about key areas of potential friction for multicultural design research teams
- Develop games as a way to enhance multicultural design research teams and outcomes
- Bring “design” and “play” to the realm of multicultural work, and vice versa
- Discuss how to apply “play” and “fun” in participants’ own design research practice or classrooms

Co-facilitators will break the larger group up into smaller working groups; each group will choose a specific topic to address. Each small group will work together to integrate the topic into a rough prototype of an analog game. Teams will share their final game ideas with the larger group and have a group discussion of the outcomes. The games themselves might be used by participants following the conference—for example, in their own classrooms or research groups, hopefully expanding the ideas generated during the session.

During the session, facilitators will remind participants to check their sense of power, privilege, and cultural identity. In doing this during the session, faculty will begin to model the behavior they want to see from their students in classroom scenarios.

Responses, feedback, insights, and discussion captured through documentation and visual contributions during the workshop (post-it notes, diagramming, sketching, prototypes, etc.) will be summarized and shared via conference proceedings, publications, and the facilitators’ research website.

PROSPECTIVE AUDIENCE(S)

This session is ideal for design researchers who want to improve their ability to communicate and collaborate across institutional, co-located, or remote cultures. One does not need to be a designer in order to benefit from this session. However, this activity group will offer unique ideas, tools and techniques to designers and design educators looking for resources to enhance their multicultural design capabilities and outputs.

CONFERENCE THEMES

While this session is an extension of our research in intercultural design collaboration, we hope that participants will see broader value beyond our research in the specific types of intercultural collaborations we’ve been facilitating. The session itself is a reflection of how to bring game design concepts into defining and doing inclusive design research, and larger disciplinary discussions of diversity, equity and inclusion. The session will also address the conference topics of expanding opportunities for who gets to participate in design research; and diversification of the design discipline in terms of sociocultural perspectives.
New methods for creative co-production across cultures will enhance outcomes of collaborative and inclusive research-through-making.

Introducing ‘play’ and ‘fun’ into participatory and collaborative processes can be valuable for engaging students, faculty, community members, and other constituents in hands-on design research and redefine what it means to work with designers.

- If you are facilitating an activity group, you may want to include:
  - What key question(s) do you wish participants to explore during your session?

How can we use ‘play’ to better engage design researchers (in the classroom and beyond) when working outside of comfort zones (in terms of cultural differences, privilege, power) and dealing with ‘heavy’ topics (e.g. global water sustainability)?

**EXPECTED OUTCOMES**

- What kind of outcome(s) do you hope for or expect from this session?

The session will be highly interactive and practice-focused where participants will gain a deeper understanding of how to use game-design elements and principles (in non-game contexts) to make design research more inclusive.

**STRATEGY**

- What approaches will you use to engage participants to ensure an active session?

We will break the larger group up into smaller working groups; each group will choose a specific topic to address. Each small group will work together to integrate the topic into a rough prototype of an analog game, which they will test with other participants/players. Final game ideas will be shared with the larger group and we will have a group discussion of the outcomes. The games themselves might be used by participants following the conference—for example, in their own classrooms or research groups, and we hope they would expand on the ideas generated during the session.
Indeed, most people place the words “game,” “play,” and “fun” in a straightforward relationship:

• “Game” is the formal activity that you perform.
• “Play” is the actual behavior that you engage in.
• “Fun” is the experience or emotion that you derive from that behavior.

In what way(s) will you address one or more of the conference themes/topics? Which ones?

The session itself is a reflection of how to bring game design concepts into defining and doing inclusive design research, and larger disciplinary discussions of diversity, equity and inclusion.

Connecting design research to pedagogical learning environments can be mutually beneficial to researchers and students.

How will you address inclusivity in your session to engage participants of all types and abilities?

We will give participants reminders to check their sense of power, privilege, and cultural identity throughout the process. In doing this during the session, faculty will begin to model the behavior they want to see from their students in classroom scenarios.

How feasible is your strategy regarding the time you have before and during the conference as well as regarding contingencies during the conference?

We have taken reviewer feedback into account and have reworked our session to be more compact and feasible in terms of time, content, and outcomes for participants.

» Decipher Session Timeline & Guidelines

10:00
SESSION START (on the hour or half-hour)

10:00–10:05 am
Introductions

10:05–10:10 am
Fast-paced, pechakucha-style overview of our research in intercultural design collaborations and introduction to ‘play’ and ‘fun’ as an ingredient in participatory and collaborative processes. Discuss topics of cultural differences, privilege, power as a group.

10:10–10:20: Introduce 5 key topics for exploration about where can play come into intercultural co-creation projects (Suggested topics include: communication, accountability, ownership, evaluation and critique, role assessment, assigning tasks, and sharing and working with each other’s project components (ideas, files, etc.)).

10:20–11:05
Each small group will work together to integrate the topic into a rough prototype of an analog game and also write a flip chart overview of their game, its rules, and objectives for play. If time allows, test the prototype with other participants/players or members of the team.

11:05–11:20
Share final game ideas with the larger group (One-minute presentation and two-minute feedback, for a total of three minutes per team); Group discussion of the outcomes and how the games themselves might be used by participants following the conference—for example, in their own classrooms or research groups; discussion of other ways to expand on the ideas generated during the session.

11:20
SESSION END

(11:20–11:25: Collect game descriptions from group ‘scribes’ / photo documentation of prototypes and flip chart overviews)

11:25–11:30: Flip chart overview of session
Discursive Design and the Question of Impact: Perspective, Pedagogy, Practice

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Keywords
Discursive design, Critical design, Speculative design, Design fiction, Post-Critical Design, Research through design, Discourse through design, Provocative prototyping, Social Engagement, Impact, Assessment

WHAT IS DISCURSIVE DESIGN?
Discursive design—encompassing critical design, speculative design, design fiction, guerrilla futures, adversarial design, critical HCI, and others—is coming of age. This reflects a continued expansion of the field of design from beyond its commercial emphasis, to socially responsible arenas, to experimental agendas, and now further toward particular intellectual outcomes. Design wants to do more amid an increasingly complex world of information, products, services, and systems.

Discursive design is an umbrella category—a type of genus with many critical, speculative, and provocative species of design that strive for audience reflection upon substantive topics, like childhood obesity, data privacy, and colony collapse disorder of bees, for example. Discourses—systems of thought or knowledge—are embodied within or are engendered through designed objects. While they offer some degree of utility, whether real or rhetorical, the goal is intellectual in nature [at least initially]. It is based upon the premise that if design’s primary goal is creating utilitarian objects, it should be user-centered. But, if its primary goal is discursive, it should be audience-centered. This is a sometimes subtle, but important shift involving design approach, dissemination, and evaluation.

THE CHALLENGE OF IMPACT
Despite an increased presence in seminars and studios over the last decade, and even with specifically dedicated curricula, the many species of discursive design suffer from lack of literature, organizing structure, and overall clarity. This is true for theory, practice, and practice-as-research within the academy, but also for industry and other institutions that increasingly see its value.

With some history behind it, some current criticism of discursive design practice is that despite its intellectual aims, it does not know and do enough to achieve its goals of audience reflection—to have an impact, or the intended impact. Discursive designers, it’s said, do not have sufficient understanding of the topics they want to communicate and engender through their work. They should be more aware of the competing perspectives inherent in any complex topic, the type of stance they take through their work, and the ethical consequences of it. If not, they may be understood as “wrong,” or can inspire unintended and even counterproductive consequences, or are too easily ignored.

Discursive designers are also knocked for not doing enough to effectively disseminate their work. They claim to want to affect audience reflection, debate, and social change, but they merely place their work in elite galleries or in their online portfolios—design for designers. And in research contexts, where discursive design probes stakeholder values, attitudes and beliefs, there exist the [typical] challenges of achieving valid, reliable, and generalizable knowledge. Across both research and practice—and certainly within the classroom—implicit and even explicit assertions regarding insight and impact are prevalent, but largely follow strategies of hope and anecdotal assessment. It is also common, which may be even more problematic, that concern for impact is not even an earnest design consideration—discursive design is mere folly or better understood as art practice.

DISCURSIVE DESIGN—SO WHAT?
Interesting perhaps, but what does or could discursive design really do? How does it serve, or might it better contribute and produce value? This Decipher conversation will begin with a brief propositional framework to help open up this space so various perspectives of the community of academics,
researchers, and practitioners can be brought to bear upon the question of discursive design impact.

If discursive design is to be more than exercise or folly, to what extent should it be concerned with deliberately achieving certain outcomes?

Following other more mature disciplines, is discussing and demonstrating impact and contribution key to its advancement and broader acceptance?

If discursive design is capable of having any impact upon the world how might we know? What is the role of research in assessing a project’s outcomes, and more broadly, the field itself?

If discursive design is understood as a potent tool, to what extent should designers take responsibility for its outcomes—good and bad?

While at least initially discursive design focuses upon intellectual effect—reminding, informing, inspiring, provoking, and persuading—to what extent should it further strive for action and change in the world (the critical versus post-critical)? Should it be satisfied with “mere” reflection and debate?

» Strategy and Objectives

SESSION GOAL

Discursive design, regarded as an umbrella term for critical, speculative, and provocative species of design, enables practitioners and researchers to utilize design products as intellectual and reflective interventions concerning substantive topics. While interesting perhaps, what does or could discursive design really accomplish? How does it serve, or might it better contribute and produce value? The objective of this conversation is to question and discuss the impact of discursive design inside and outside the classroom and as a research-through-design practice and tool of design activism.

This conversation would be enriched by designers (independent, corporate, institutional) who engage in forms of discursive practice as well as educators who have taught or are interested in teaching discursive design in their studios. Since it is relative across creative fields and artifact types, those who work with graphics, products, systems, services, and interactions would benefit and be able to contribute.

EXPECTED OUTCOMES

• In addition to offering some basic vocabulary and frameworks, it is expected that participants will walk away from the conversation with a clearer idea about the potential impact of discursive design and its significance in design pedagogy and as a form of research.

• The success of this conversation will depend on the active participation of all the attendees. Despite the short time available, the conversation expects that all voices in the room contribute to framing the value and impact of discursive design drawing upon their experiences.

• The conversation seeks to generate a concrete, collective list or mind map about the value and impact (strengths and limitations) of discursive design that attendees can use to gain a better understanding of why and how discursive design applies to their professional agendas, regardless of whether directed towards design pedagogy, practice, or research.

STRATEGY

This Decipher conversation will begin with a brief propositional language and framework to help open up this space so various perspectives of the community of academics, researchers, and practitioners can be brought to bear upon the question of discursive design impact.

Next, all the attendees of this conversation are expected to engage in a debate around the following possible concerns:

• If discursive design is to be more than exercise or folly, to what extent should it be concerned with deliberately achieving certain outcomes?

• Following other more mature disciplines, is discussing and demonstrating impact and contribution key to its advancement and broader acceptance?
• If discursive design is capable of having any impact upon the world how might we know? What is the role of research in assessing a project’s outcomes, and more broadly, the field itself?
• If discursive design is understood as a potent tool, to what extent should designers take responsibility for its outcomes—good and bad?
• As an intellectual engagement discursive design focuses, at least at first, upon intellectual effect—reminding, informing, inspiring, provoking, and persuading. But to what extent should it further strive for action and change in the world (the critical versus post-critical question)? Should it be satisfied with “mere” reflection and hopeful debate?

The conversation acknowledges that time is quite limited, so each attendee will have a short time to intervene and will seek to build on previous comments and ideas. Taking a more pluralist account of discursive practices, the conversation will focus on the value and impact of discursive design rather than debates about what discursive design is or how it might be particularly defined.

» Timeline and Guidelines

SESSION STARTS (3:00 PM)
3:00 to 3:05
Presentation of discursive design framework
(introduction to the concept)

3:05 to 3:10
Positing the challenge of value and impact of discursive design

SESSION ENDS (3:50 PM)
3:15 to 3:40
Debate/Conversation

3:40 to 3:50
Wrap-up and creation of list about critical aspects of value and impact of discursive design that apply across design disciplines

Teaching Design Research:
Challenging the design research ‘canon’ in the classroom.

LIZ PATTERTSON
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NATALIA ILYIN
Professor of Design at Cornish College of the Arts in Seattle

MDHI: MAKE DESIGN HISTORY INCLUSIVE

Natalia Ilyin and Liz Patterson co-teach an unusual design history curriculum at Cornish College of the Arts. In four semesters, Sophomores learn about the well-codified “Western Design Canon,” the collection of hero stories that serves to give designers a cohesive identity. Juniors then take it apart, find stories they feel are missing, and research them. They research designers or design groups that shared time and space with the hero-stories of Western European design, but never had the spotlight shined upon them.

The Juniors research and create annotated bibliographies of 80-100 citations about a topic they believe should be a part of our shared design heritage. We do not give them suggested areas of study: we want them to choose something important to them, so that their personal stories and backgrounds fuel the long hours of their research.

in Contemporary Calligraphy,” “The Women of the Taller de Grafica Popular,” “José Guadalupe Posada,” “The Design of the Mexican Revolution,” “Asian Female Designers,” “Chinese-American Visual Artists of the 20th Century,” “The History of Emojis,” and more. All of these subjects deserve a place in design history, and now, because of these students, all have at least one comprehensive bibliography dedicated to their subject.

We believe that this undergraduate research is a starting place for a mapping of a design history based on the interests and values of many voices. We’ve begun a publishing project: the first set of bibliographies, Parallel Narratives: Volume 1 was published in Spring 2018, thanks to donations from the 94 people who contributed to a GoFundMe campaign entitled, “Make Design History Inclusive.”

At Decipher, Ilyin and Patterson would like to facilitate a conversation about inclusivity and student-led design history research. We would like to center our discussion around what a more inclusive design history can look like, the benefits that we have seen in our own experience, and ways to increase the breadth of research in the field. When our research website is closer to completion, Ilyin and Patterson will encourage the participation of other institutions, and hope to establish inter-institutional relationships that grow the bibliography archive online.

» Strategy and Objectives

SESSION GOAL

- The session will help participants map where they are now and where they are going with their curricular choices for design history. Are they including narratives outside of the accepted Design Canon?
- In mapping their current curriculum educators can plan future inclusions of separate and valuable historical narratives.

Key Questions and conversation prompt in our session:

- Where does your curriculum fall on a spectrum of inclusivity?

EXPECTED OUTCOMES

- Discuss the ways design history has traditionally been taught and ways to broaden the conversation.
- Discuss curricular structures for design history that ensures many voices are heard.
- Promote inter-institutional cross-pollination.
- Record and synthesize findings in a document for publication.
- This session will be successful is session participants will be able to identify areas of their curriculum that can be expanded.

STRATEGY

- To ensure an active session, time will be evenly split between presentation, structured discussion, and an open-ended discussion.
- By focusing on inclusive undergraduate research as a starting place for a mapping of design history, we are addressing this conference theme: Teaching Design Research/Challenging the design research ‘canon’ in the classroom.
- We will center a discussion around what a more inclusive design history can look like, the benefits that we have seen in our own experience, and ways to increase the breadth of research in the field.
- Dividing our time in regular fifteen-minute increments makes a discussion of inclusivity possible in the time allowed.
» Timeline and Guidelines

SESSION START 3:00 PM

3:00-3:05 PM
Contextualization
• Current challenges in Teaching Design History and Research

3:05-3:15
Presentation
• Parallel Narratives

3:15-3:30 PM
Participation: Structured Conversation/ Spectrum finding
• Participant challenge and response: Where does my curriculum fall on a spectrum of inclusivity?

3:30-3:45
Participation: Open discussion
• What five narratives are most important for your design history curriculum?

3:45-3:50 PM
Plan of Action
• How can we work together?
• Parallel Narratives as a hub?

SESSION END 3:50 PM
(Last 10–15 minutes before start of next session: create quick flip-chart recaps)
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Re-dressing the Window: Defining and Establishing Best Practices for Authentic Multidisciplinary Graphic Design Research

CARISSA HENRIQUES
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Keywords
Multidisciplinary Research, Cross-disciplinary research, Trans-disciplinary research, Collaborative Research, Anti-disciplinary Research, Post-disciplinarity

In recent years, a new paradigm in graphic design has emerged, one that promotes cross-disciplinary work, learning through making, and design thinking. Because the kind of work most graphic designers engage in involves others—e.g. clients—design educators must define and differentiate between cross-disciplinary design research and graphic design practice.

In practice, graphic designers constantly engage with other disciplines. Through client-based projects, graphic designers navigate the push and pull between other disciplines with the goal of solving their client’s problems or meeting the client’s visual communication needs. In the best relationships, clients become collaborators, working toward the same goals. In the worst, the graphic designer becomes a “window dresser” or “pixel-pusher” simply reproducing a client’s non-negotiable vision, words, and images.

The current trend towards multidisciplinary work as the newest (and perhaps most fundable) academic approach has cultivated relationships that approximate client-based work, under the guise of a grant or a funded study, but are not collaborative at their core. For example, a researcher from another discipline, in hopes of gleaning the skill sets of a graphic designer, may add a designer to their grant proposal—perhaps going so far as to call them a Co-Principal Investigator—for services such as data visualization, publication design, web design, or interactive design. The appearance of cross-disciplinary work is present in such an example, when the reality is that the graphic designer “window dresses” the work of others. This example does not seek to downplay the significance of the graphic designer’s role in the visual communication and interpretation of content, but the question remains if the designer’s involvement is, in fact, collaborative? Is the designer truly crossing over into another discipline? And does one call this mode of working, or another like it, “interdisciplinary research?”

Graphic design educators need to reach consensus on what constitutes cross-disciplinary research. The rush to cultivate a cross-disciplinary or collaborative culture across campuses has resulted in a muddling of the definition of collaborative research for the graphic designer, specifically, as our default mode of working is to collaborate with others. What, then, constitutes collaborative or cross-disciplinary research and is this (or should it be) distinct from graphic design practice? For example, does the work need to be free of client interest? Speculative? Grant-funded? Etc.

This proposal seeks to to stimulate a meaningful dialogue between graphic design educators and practitioners centered on cross/inter/trans-disciplinary graphic design research. From this discussion, participants will frame “best practices” for multidisciplinary graphic design research as well as address learning outcomes and objectives for cross-disciplinary student research. Faculty participants will be invited to share their experiences working in this manner, including discussing the very real barrier of promotion and tenure requirements as they pertain to work across disciplines.

KEY QUESTIONS/DISCUSSION POINTS:

- How do we define cross-disciplinary research? And does research differ from practice?
- Do we need to define sub-categories for this kind of work?
- What is the role of the graphic designer (e.g. form giver?) in a cross-disciplinary research project and what constitutes a meaningful graphic design contribution?
- Is research considered cross-disciplinary simply because a graphic designer has a seat at the table?
FORMS OF DESIGN RESEARCH TO BE DISCUSSED:
• Cross-disciplinary research
• Trans-disciplinary research
• Collaborative Research
• Anti-disciplinary Research
• Post-disciplinary Research

» Strategy and Objectives

SESSION GOAL
The purpose of this session is to engage design educators and practitioners in a meaningful dialogue centering on “best practices” for multi-disciplinary research.

The goal of this session is to help bring clarity and definition to an undefined and inherently messy form of design research. Through framing what it means to authentically engage in multi-disciplinary work as a graphic designer, participants will also define what it is not. Thus, the goal is to distinguish what, if any differences exist between graphic design practice and multi-disciplinary graphic design research.

KEY QUESTIONS:
• How do we define cross-disciplinary research? And does research differ from practice?
• Do we need to define sub-categories for this kind of work?
• What is the role of the graphic designer (e.g. form giver?) in a cross-disciplinary research project and what constitutes a meaningful graphic design contribution?
• Is research considered cross-disciplinary simply because a graphic designer has a seat at the table?

STRATEGY
During the activity group, participants will engage in:
• Timed, guided activities to stimulate dialogue
• Small group discussion
• Group reporting to consolidate key discussion points

» Timeline & Guidelines
SESSION START (on the hour or half-hour)
5 min.
Short introduction by activity group facilitator (Henriques)

5 min.
Break into smaller working groups (based on attendee numbers)

10 min
Small group icebreaker

45 min
Small group activities

25 min
Small group reporting, discussion, and recap
Designing sensorial dialogues

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Keywords
tangible and intangible materialities, processual design, embodied sketching, experiential knowledge, visual and non-visual design research, multimodal techniques, staging

DOING DESIGN RESEARCH

Designing with volatile, invisible and intangible materialities need experiential methods. Through the experimental format suggestive of ‘through research’ (Frayling 1993) in our previous collaborations, we proposed various experiential set-ups and working scripts that were directed by our constant dialogue (Figure 1). We want to investigate further the potentials of designing through the speculative and embodied method for design research.

With this proposal, we are addressing the “doing design research” for the experiential forms through our project. Our interest is to investigate ways of designing with the invisible and intangible materialities, such as light and smell, since these are experiential qualities, it is best explored through doing. The workshop proposed is aimed at opening up questions to design spaces with such atmospheric materialities through the “low-tech” explorative and speculative way.

We seek for experiential forms that go beyond graphic and model forms in spatial design. What are the processes, methods and materials to design with intangibles through the tangibles? For instance, designing with tactile surfaces of textiles through a smell, sound or light set-up, referring to our workshop-performance staging a smelly atmosphere, we touch the “three principle types of experiential knowledge:

explicit, tacit and ineffable” [Biggs 2004, 6]. The interactions with the materials become the tacit component, smells are the ineffable [Reason 2003] and the interpretation along with the representation of the practice is the explicit knowledge that is generated through our collaboration.

BACKGROUND
We relate to the emerging design research that highlights the performative and processual dimensions of design practice and research [De Visscher, Boussard & Vareilles 2016] as well as the embodied ideation ways, which are actually difficult to convey [Tomico, Wilde & Vallgård 2017]. When working with intangible and invisible materials, visual methods become redundant. However, when allowing embodied and experiential research methods together with the visual methods, there is a dialogue between the tangible and intangible materialities.

Through the practice, the dialogue emerges. “I shall consider designing as a conversation with the materials of a situation.”[Schön 2003, 78] In this case, it is not just about the verbal dialogue between design researchers in cross-disciplinary settings, but also the design process that allows materials and the ambient conditions to encounter each other in an unexpected and unpredictable ways. It is also about the dialogue between the researcher and the materials in the space. As argued by Dyrssen [Dyrssen 2010, 223-239] “Staging explorative experiments use invention, intervention and discovery as the main driving forces when setting up and actively examining specific situations. This may reveal the unexpected, repressed or hidden, and it trains the researcher in rapidly switching between associative and systematic thinking, to develop an intuitive precision and different types of logic.”

How does a researcher approach spatial design research with diverse materialities? What questions open up? Agreeing with Helgason [Helgason 2016] on speculative approach that initiates dialogue when working through different perspectives from various disciplines [Mitrovic & Šuran 2016], this workshop combines visual and non-visual design research methods that demonstrate a speculative approach to spatial designing. Also, creating atmospheric set-ups/models through the materialities that are invisible and intangible for spatial designing, we use design as a tool as suggested by Dunne et.al to create ideas [Dunne 2013].

The common thread within any of the design fields is the visual methods of working. Due to application of different materials and different outputs, these methods vary and perhaps lead to creating boundaries within the disciplines. However, as Mitrovic [Mitrovic et al 2016] argues that multidisciplinarity/transdisciplinarity thinking would allow to open up the dialogue and question these borders within the disciplines with a speculative practice [Mitrovic et al 2016]. Can these dialogues become a design method or a communicative tool?

WORKSHOP CONCEPT
The explorations within this workshop proposal deal with the visual, olfactory and tactile senses. Through dynamic spatial arrangements with ‘textile artefacts’ the intangibles become materialised. For instance, light effects obtain tangible boundaries in relation to surfaces in space (Figure 2).

Figure 2: Visuals from explorations with light - surface interactions (indoor and outdoor).

Through drawing, sketching on paper, digitally or through scale models it is difficult to grasp the intangible aspects of the space and their interactions. However, what if we are able to explore, represent and articulate aspects like smells, light and colour through an embodied sketching, i.e. doing research by performing, staging with chosen materialities? The traditional spatial ideation techniques are challenged in this way through the immediate interactions with dynamic spatial arrangements here taken as atmospheric setups. Thus, allowing to integrate diverse shifting environmental conditions [for example changing lighting of a room adding moisture or changing temperature], characteristic bodily movements and a variety of material props. In addition, we not only consider the more distant frontal or top view but also the exploration of the inside and around (various perspectives in 360°) in order to understand the atmospheric
interactions of space and the “atmospheric expressions” that emanate. This is an opportunity to explore the potentials of designing with such ‘analogue’ atmospheric setups in the context of the computer assisted design, HCI and AI. To be able to articulate the un-seen and unrealized atmospheric qualities that require other senses than only visual but also the multi-sensorial inputs, that would bridge this knowledge to the latest technology for the meaningful outputs.

We would invite the participants (designers & practitioners) here to a speculative approach to explore and negotiate the non-visual materialities of a space. And to indulge in designing the sensorial dialogue with the body, materials and space. Our presented method of staging and multimodal research display will enable participants to explore and discuss how a designer arrange and express these materialities in a space.

REFERENCES

WORKSHOP AIM
• Explore through embodied sketching using tangible (textile textures) and intangible materialities (smells and light) of the materials and space respectively;
• Taking a speculative approach create and discuss an experiential setting that triggers a dialogue between the materials and the environment by using the proposed method of staging.

» Workshop Details and Structure

INTENDED AUDIENCE
Participants from diverse backgrounds and an openness to experimental explorations. Practitioners, educators or researchers using visual and non-visual design methods and techniques. Preferably related to spatial design (architecture and interior design), textile design, fashion design, product design and lighting design or other design disciplines.

About 5 teams - each comprising of 2 members. Minimum number of 6 people. English language for communication is a must.
• Space and Equipment Required
• Big studio Space (informal) with a possibility of arranging 6 workstations. Each workstation comprises of
• Space of about 15 - 20 sq.m (can be negotiated)
• 1 Table
• 2 chairs
• Electric plug points/extension cables
• 2 Camera stands (with a possibility of a smartphone holder)
• 1 Camera if possible
• Equipment for presentations: projector (in the big studio)
• Equipment for staging: portable light spots
• Printing facilities
• In addition, outdoor working space (in garden/trees)
• Participants are asked to have these devices:
• Camera, video and Audio recorders
• Laptops if possible.
of their own practice or research (speculative and experiential potentials of a staged space)?

5) Flipchart recap (15-20 min) 12:30 - 12:50

EXPECTED OUTCOMES AND FINDINGS
Workshop participants are expected to:
- Get an understanding how to capture and demonstrate the embodied research process through the performative workshop format;
- Experience a method to tackle sensorial aspects of spaces in a design process;
- Use multimodal techniques to explore, represent and design varied sensory expressions.

POTENTIAL OUTPUTS
Through this workshop, the expected findings as listed above, would lead to the textual, visual and olfactory artefacts producing new experiential knowledge. In addition, productive discussions on diverse viewpoints of including in-tangible and non-visual materialities to not only the spatial design research education and practice but also finding a common ground between other disciplines. In the presented format of the workshop-performance by us together with the participants, the ideation process brings the focus to the “doing” design research and at the same time suggests a method for the dissemination/presentation of the research that involves the experiential setting.

» Strategy and Objectives

SESSION GOAL
- Explore through embodied sketching using tangible (textile textures) and intangible materialities (smells and light) of the materials and space respectively;
- Taking a speculative approach create and discuss an experiential setting that triggers a dialogue between the materials and the environment by using the proposed method of staging.
EXPECTED OUTCOMES

- Workshop participants are expected to:
  » Get an understanding how to capture and demonstrate the embodied research process through the performative workshop format;
  » Experience a method to tackle sensorial aspects of spaces in a design process;
  » Use multimodal techniques to explore, represent and design varied sensory expressions.

STRATEGY

The proposal is intended to be a 2.5 hours workshop and is divided into 4 parts:

1) Introduction /Warm Up (15 min) 10:00 - 10:15
   About 5 Teams, each of 2 members to be build up and informed to participants prior to the date of workshop. Constellation of teams is done keeping in mind diverse backgrounds (professional background/practice of the participants to be registered and noted).
   » Team members introduce each other. 05 min
   » Briefing and presenting the staging and multi-modal (re-presentation-research) methods - 10 min.

2) Investigation/exploration (45 min) 10:15 - 11:15
   » Introducing the materials to the teams - pre-defined for either smell or light explorations;
   » Within each individual team, using the provided materials and method of embodied sketching, speculate and stage a setting/atmosphere/interior space;
   » Pre-define ways of representation of design research process and use it for documenting the creative process: dialogues, movements, arrangements either in video and audio or in pictures. Use the multimodal techniques to represent your design process, i.e. dialogues, performing scripts, videos, images, creating gifs while working with the tangible (textiles) and intangible materials (light, smells).

3) Making documentation of the process and research method ready for presentation (15-20 min) 11:15 - 11:30
   » Select visual or/and non-visual artifacts from your explorations as above and propose captions - a title that indicate the nature of the explored atmospheric setting.

4) Presentation and Discussions (5-9 min per team) 11:30 - 12:30
   - Bring forward the design process for the designed expressions, for instance through dialogues with different materialities. Discuss, where do the dialogues emerge (during set-up or conditions or materials etc.).
   » Discuss the inclusion of intangible materials in your designed expression. For example, exploring the boundaries with smells in the staged setting. How would it help each of the team members in terms of their own practice or research (speculative and experiential potentials of a staged space)?

5) Flipchart recap (15-20 min) 12:30 - 12:50

EXPECTED OUTCOMES AND FINDINGS

Workshop participants are expected to:

- Get an understanding how to capture and demonstrate the embodied research process through the performative workshop format;
- Experience a method to tackle sensorial aspects of spaces in a design process;
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POTENTIAL OUTPUTS

Through this workshop, the expected findings as listed above, would lead to the textual, visual and olfactory artefacts producing new experiential knowledge. In addition, productive discussions on diverse viewpoints of including in-tangible and non-visual materialities to not only the spatial design research education and practice but also finding a common ground between other disciplines. In the presented format of the workshop-performance by us together with the participants, the ideation process brings the focus to the “doing” design research and at the same time suggests a method for the dissemination/presentation of the research that involves the experiential setting.
» Timeline & Guidelines

SESSION START 2:00pm, September 29th

5 minutes
• Introduction / who facilitator is, etc.
• Explain how this project flows on from the books to the individual dementia projects
• Also “in the next two hours...”
• Explain that they will be recorded and filmed and how the results will be used

3 minutes
• Organise / Sit together in groups of 4/5
• Fill out the mapping document (name, contact details, organisation)
• Choose a ‘task keeper’ for each table who keeps each working group to task

5 minutes
• Share personal story (ie. the screen -> how to talk, find the right language

7 minutes
• Fill in reflection worksheet
• DO: fill in the name/insight part and cut it out

15 minutes (*/2:20)
• Share reflection with others per group
• DO: place name/insight on mapping document

5 minutes
• Read through Student project summary
• DO: fill in the fictional brief title and summary statement and cut it out

10 minutes (*/2:50)
• Share fictional brief title and summary statement
• DO: place this on mapping document

10 minutes
• write down what you think students learned through this experience, from taking risks to research skills to soft skills, like listening.
• DO: place these on mapping document

5 minutes (*/3:25)
• Participants suggest courses/classes in their school and local organisations or social contexts which they feel would benefit from this approach
• DO: write these down and place them in the appropriate area on the mapping document.

10 minutes
• Participants will refer to the AIGA white paper (a copy will be provided) which discusses trends and competencies for designers in 2025. The group will choose 2 or 3 of these titles as being most relevant to the student projects discussed in their group.
• DO: place 2-3 trends/competencies
• DO: articulate with short paragraph or bulleted list how these briefs support these trends/competencies

5 minutes
• Taking a green dot from their worksheet, users go around the table and tell what aspect of the workshop they are ‘taking away’. Ie. incentive to work with community, refreshing a course with more challenging users, authentic social design initiatives...

SESSION STOP 3:50pm

10 minutes
• A ‘leader’ from every group will summarise their group’s insights and what their group is taking away from the workshop on a flip-chart.
• This will be filmed.
• While the group ‘leader’ is filling this out, a collection of participants will be asked to set up a time for a 10 minute interview.

A MORE DETAILED OVERVIEW OF WHAT WILL BE DISCUSSED IN EACH POINT IS LISTED BELOW.

1) Participants are given a reflection worksheet in which they will be asked to reflect on their own experiences: When did they work together with another person and this interaction impacted their design practice? When did working together with an end-user lead to a ‘design insight’ that has stuck with them or changed how they work or do research?
2) Having broken into small groups of 4-5 participants will share these experiences with each other. After this exchange, participants will gather keywords that summarize this 'lasting impact' on the mapping document. What type of experience was it? What skills were gained or was it a gap that was identified? How does this experience shape their educational practice?

3) Participants will then each receive an individual student project which details who the student is, what they are studying, what year they are in, who they were designing together with, what they made as well as a collection of quotes from their own reflections. After the participants have read their student project description, they will suggest a fictional title for the brief the student was responding to; including a short brief summary one-liner that describes the intention of the brief (what the project trying to do).

4) Participants will then introduce their brief title and one-liner to the others in their group, placing it on the mapping document. After doing this, they will tell how their student responded to this 'brief' by summarizing the student’s project/experience in their own words and by identifying and sharing one of the quotes that stands out to them or resonates with them to the rest of the group.

5) Based on their own reading and understanding of the student project, they will then suggest what their student 'took away' from the experience in terms of learning, design skills he/she used and/or knowledge gained as well as what he/she might have taken away in terms of other design or human values.

6) Next, the group will propose, based on the information they have received, how this class this student took might differ from 'typical design classes' in their own institution in terms of timing, interaction, location, context, etc.

7) Building upon these points of difference participants suggest courses/classes in their school and local organizations or social contexts which they feel would benefit from this approach both within their own community or in terms of wider context.

8) If time allows, in reference to the AIGA Designer 2025’s trends and competencies whitepaper, the group will, after discussion, pick 2 of these headings and articulate how this designing for one approach supports these competencies (referring to ‘their’ student projects and the student takeaways/experience)

9) In closing, each participant will identify an areas of the workshop that they rate as being valuable. These will help to identify what aspects of their reflection that they want to share later with the facilitator.

If time allows, a group representative will share the results with the other group(s).

Remaining time will be given to film a collection of participants to reflect on the workshop and or set up a time to interview the participants.
Unpacking Context in design research through Orality and Narrative Inquiry

SUDEBI THAKURATA
Narrative designer, facilitator, thinker, educator and writer

Keywords:
orality, context, narratives, pedagogy, design research, systems thinking, design education

KEY QUESTIONS:
Some of the questions that I would like to explore in collaboration with my audience are:

Are there inter-connections between oral history and design research, considering both have elements like interview, context, people and narration and both value memory as a site of knowledge? Can oral history be sources of narratives that constitute the heritage of a landscape-an essential component in understanding, interpreting, and looking after the heritage with the knowledge of the heritage, from an insider’s point of view and memory? What relationship do memory and narration have in understanding and de-constructing a context, considering contextual inquiry forms an important basis of design education?

What can be some guideline or ‘frames of reference’, from which researchers and practitioners can work in order to enhance collaboration, inclusion and emancipation in research relationships, while facilitating participatory approaches, especially when a researcher considers participants as actors in research, which is a shift in perspective from doing research ‘on them’ versus doing research ‘with them’? In that context, can multiple participant narratives be presented where the readers can interpret and analyse them as opposed to the researcher adding interpretations along with the actual text?

Design research being inter-disciplinary or trans-disciplinary in nature, how do a variety of research methodologies, especially in terms of how the research questions are formulated, situated and inquired, inform and enrich that?

As a design and art educator especially someone teaching design research to aspiring designers, these are some questions that often chase me. This is because in art and design education contextual learning plays a major role, and very often the inquiry that leads to understanding of the user, process, product or environment of research is situated in a context.

INTRODUCTION:
In this activity group I would like to design an environment that will facilitate the exploration of a few inter-connected and inter-related ideas and resulting insights that I have generated through my work as a design educator, design researcher and pedagogue. I wish to construct visual conversations around an interesting methodology in teaching and doing design research: the intersections of orality, narrative inquiry and design research and orality and narrative inquiry as a pedagogical tool as well to approach design research. There would be triggers given in the forms of case studies generated out of research, quotes from existing literature, related ideas, provocative statements and probing questions, which will be inter-connected and inter-woven through an active facilitation.

The idea is to explore how do learners observe, document and examine, how do they decode the meaning of the multiple forms, objects, subjects and contexts of storytelling and how then do they create newer forms: more importantly how their processes can be unpacked and curated to showcase a bigger learning that educators can learn from.

SETTING THE CONTEXT:
DEFINING CONTEXT AND ORALITY:
One of the dictionary definitions of the term ‘context’ is “the whole situation, background or environment relevant to a particular event” where context is indicated to be a complex set of factors through the phrase ‘whole situation’. In a way context is an element surrounding its members in a continuous presence, implying that context is ‘complex, multifarious and enveloping’ with multiple aspects. What is also important to keep in mind is how an aspect is determined by the particular situational factors which are studied and the way in which these elements are interpreted. Context in this case is not seen as an ‘additive influence of discrete entities but rather the simultaneous interaction of a number of mutually influential factors.”
It has also been argued that the focus in research methods often is on where and how researchers view reality and evidence and particularly the value of evidence. In this process, often the context from which the evidence is gained is overlooked.

The case-studies which will be used in this activity group are from a collection of design led and design driven research narratives. They will be used as narrative devices or provocations to allow people to think, trigger conversations and initiate discourses. In this, oral history and life stories will be used as pedagogical tools of contextual observation, analysis, reflection, interpretation and storytelling. The examples will be from processes which had been mediated by orality, where the design of learning delved into the socio-cultural-historical dimensions of a context. The case studies will not be presentations but representations of some of the shifts that an authentic design research might be able to achieve. The premise of this work on case study research is the need for ways of understanding how people behave ‘in context’. Conversations around the evidence existing in the case setting also will be abstracted and collated and eventually all the located evidence might be interwoven into a narrative account.

Eventually the focus would be to unpack the word context in design research through these examples, experiences, expressions and explorations and to also collectively ideate about possible ways of leading designers to navigate within this complexity. This is particularly important considering the ever-changing contexts of people in the present and in the future times, and the various complex relationships and interactions that exist within a given context.

NARRATIVE INQUIRY:
It is said that in narrative inquiry, narrative is used both for collection and representation of data, which are created and revised by the researchers in collaboration with their
‘subjects’. Interestingly, narrative becomes both the method and the content of the inquiry. It allows one to study one’s own experience as well as that of the other people, and explore people, place and context with the understanding that action and beliefs are grounded in personal and cultural histories and cannot be inquired in isolation. In this process of inquiry, the inquirer and the objects of inquiry get intertwined, both at the level of data gathering as well as the evaluation of the data. Narrative accounts are constructed collaboratively with the participants, where interview data is supplemented by participant observation written in a narrative style. This interpersonal relationship, along with an attempt to understand not just the people, but the context, is an important aspect of design research as well.

PARTICIPATION IN DESIGN:
In a bid to make design more usable and acceptable, the significance of user involvement in design activities have been recognized and it has been quite some time that the idea of ‘participation’ is considered critical in the realms of design research, especially in cross-cultural design.

The proposed theme of unpacking context through orality and narrative inquiry therefore becomes relevant in thinking about developing contextually appropriate and consensual methods in design with communities.
STORY AS AN ESSENTIAL ‘SENSE’ FOR THE CONCEPTUAL ECONOMY:

Pink in his book ‘A Whole New Mind’, drawing on research from around the world, outlines six fundamentally human abilities required for professional success and personal fulfillment and also at greater length expands each one of them. The author mentions about how from an agricultural age characterized by farmers in the 18th century there was a shift to the Industrial Age characterized by factory workers in the 19th century, which then shifted to the Information Age in the 20th century characterized by knowledge workers and in the 21st century the shift has happened to a Conceptual Age characterized by creators and empathisers.

In keeping with the idea of the Designer 2025, this understanding is particularly useful, as the shift has already started not just from an Industrial economy to Knowledge economy but a knowledge economy to a conceptual one.

The shifts from a knowledge economy to a conceptual age demand shifts from a narrowly reductive and singularly analytical approach of life. What is intriguing is the idea of looking at the whole over an only right vs left brain kind of dichotomy, which isolates one from the other, whereas in most realms the two work in concert, like an orchestra. The context of this book being the West, the transition to the Conceptual Age, is substantiated by the patterns that emerge fed by a few factors, namely affluence due to the concept of abundance that characterizes Western Life, technological progress due to automation of different kinds of work, especially, white-collar work, and globalization due to which certain kinds of knowledge work has moved to Asia. The proposal of this book are six specific high-concept and high-touch aptitudes that the author has called ‘six senses’, and according to the author are essential. These six senses are ‘Design, Story, Symphony, Empathy, Play and Meaning.’ It is very interesting to see ‘Story’ being introduced as an essential sense in a conceptual age. The idea of ‘story’ in this case is introduced in contrary to just arguments, in a time where there is no dearth of information and data, where there is always a counter point to every point made in an argument. A compelling narrative is what is of importance where ‘the essence of persuasion, communication and self-understanding’ are necessary. Story as an indispensable component to guide our lives and shape our world, interestingly, like the other five senses, certainly is a fundamental human attribute.

My idea is to bring in dialogues on design research with other related methodologies like orality, narrative inquiry, contextual inquiry and many others by using story as a thread to inter-connect.

In keeping with the ideas of the web of life, expressed by Capra, of a new perception of reality, of not trying to understand anything in isolation, but in a systemic way, through a holistic worldview, which sees the world as an integrated whole over a dissociated collection of parts, the idea of the ‘ecological view’, context in design or otherwise, also demands an ‘ecological’ view embedded in deep ecology. It is mentioned in this work that the essence of deep ecology is in asking deeper questions. Narratives in their construction and de-construction has inquiry embedded in it which makes an ecological understanding of the self and the world, where narratives have the power to not just be a site but a mediator of creating the relevance by connecting the isolated parts, by being the missing piece.
This is particularly important in spaces and places, which have a predominant oral culture or whose process of meaning making is laden with narratives. So understanding the context of people, in these cases cannot happen in isolation without understanding the context, that too one which is essentially oral in nature, without delving into the aspects of inter-subjectivity and orality while data gathering, data analysis, data interpretation and data visualization.

As a design educator, narrative designer and research practitioner, I have noticed various things that are possible through, with, within and by stories/narratives. Stories help one to embody characters that are significantly different from our own ‘selves’ allowing diverse and multiple points of view being embodied and therefore perceived. The same reason also leads to greater empathy by enabling one to step into the shoes of characters that we otherwise will not experience to live as, in settings we not only are unfamiliar with, but will otherwise will not have a chance to experience. One can relate to narratives as the teller or the listener of the stories. Stories build perspectives, allow multiple and sometimes contrasting interpretations, analysis, synthesis, and most importantly stories allow one to observe oneself while observing the others. Last but not the least stories can enable action along with awareness and awakenings, and often the action happens within in the form of self-actualization or healing.

**MARRYING THE FORM WITH THE CONTENT OF THE CONVERSATION:**

Can orality be used as a pedagogical tool to gain empathy towards the teller, bring awareness of the subjectivity of the listener’s perspective and the inter-subjectivity of the retelling?

I wish to curate an experience for my audience, using pieces of work produced while learning art and design as triggers, through which I can make processes related to learning visible and hence provoke and facilitate conversations around these in teaching design research. Considering that there is no human experience that cannot be expressed in the form of a narrative, I would also like to use narratives in my inquiry as a method of data elicitation. As a part of this I would like to show/use oral history as a reflexive and reflective tool of narrative inquiry.

Interestingly I want to visualize the orality as a facilitator by creating hand-made books as a part of the facilitation where the audience’s oral/narrative response will be recorded and captured through these books.

**BIBLIOGRAPHY:**


**» Decipher Session Strategy and Objectives**

**SESSION GOAL**

Key Questions to be explored:

- Are there inter-connections between oral history and design research, considering both have elements like interview, context, people and narration and both value memory as a site of knowledge? Can oral history be sources of narratives that constitute the heritage of a landscape-an essential component in understanding,
interpreting, and looking after the heritage with the knowledge of the heritage, from an insider’s point of view and memory? What relationship do memory and narration have in understanding and de-constructing a context, considering contextual learning forms an important basis of design education?

- What can be some guideline or ‘frames of reference’, from which researchers and practitioners can work in order to enhance collaboration, inclusion and emancipation in research relationships, while facilitating participatory approaches, especially when a researcher considers participants as actors in research, which is a shift in perspective from doing research ‘on someone’ versus doing research ‘with someone’? In that context, can multiple participant narratives be presented where the readers can interpret and analyse them as opposed to the researcher adding interpretations along with the actual text?
- Design research being inter-disciplinary or trans-disciplinary in nature, how do a variety of research methodologies, especially in terms of how the research questions are formulated, situated and inquired, inform and enrich that?

EXPECTED OUTCOMES

- What kind of outcome(s) do you hope for or expect from this session?

Conversation mapping in the form of visually recorded synthesis of ideas, questions and perspectives which will lead to possibly creating a hand-made foldable book. The folds will unfold some of these deeper questions or make meaningful inter-connections, where the content of the book will guide the form. This will lead to writing a narrative account of some of the key explorations of ideas. If possible I want to initiate an online forum, in the form of a blog, where the participants can keep adding their perspectives, experiences and insights, which can get culminated into the form of a paper, for the post-conference write-up.

This way of collective making is going to be a way of thinking that I would like to facilitate.

- How will you assess the success of your session?

If some of the key terms can be defined/refined/re-defined and through that some kind of knowledge can be constructed, or insights generated with respect to the identified trends of Designer 2025, I would say the session is successful.

STRATEGY

- What approaches will you use to engage participants to ensure an active session?

I will act as a curator of conversations and ideas, as a facilitator. The way the word curation is used, meant and understood here, goes beyond the dictionary definition of it. Curation is a process of meaning-making which will allow me to pause, see, think, reflect, collect, sieve, connect, inter-connect and synthesise to construct a new whole from the old parts.

In this curatorial exploration, where my facilitation will be an act of active curation, storytelling, design, systems and pedagogy would ideally intersect and will then be inter-woven to form newer narratives, newer interpretations and newer semantics.

My role will be to create triggers using some of my knowledge, experience, insights and examples to construct new knowledge.

- In what way(s) will you address one or more of the conference themes/topics? Which ones?

My chosen topic will address the themes/trends of COMPLEXITY, CORE VALUES MATTER and NEW FORMS OF SENSEMAKING in the AIGA DESIGNER 2025 document.

I believe the session will be able to add to the reservoir of insights and frames of reference for all three of these in an inter-connected, inter-related and inter-dependent way, once I collect, collate, curate the synthesis of the session as opposed to a summative kind of way of putting it together.

The idea is also to add/refine the chosen trends bringing in aspects of context, which come from the complexities of the context from other parts of the world.

- How will you address inclusivity in your session to engage participants of all types and abilities?

My session is going to be tight and engaging, with a mix of
intellectual/cognitive, mental, emotional and physical stimuli where everybody will have some activity to do throughout, and yet will not be pressurised as there will be collaboration and co-creation as well. There is engagement at various levels using multiple modes of engagement, expressions, representations [reading, mind-mapping/sketching, talking in small groups and in large groups, walking while annotation, playing with paper-folds while making the foldable book etc.] Various tools will be used to structure conversations and thoughts, while open-ended discussion and questions will enable people to have fluidity, flexibility and cognitive stimulation.

- How feasible is your strategy regarding the time you have before and during the conference as well as regarding contingencies during the conference?

I think due to the structure and yet flexible nature of my session plan and also because, from the beginning I will facilitate the synthesis through the visual recording/mapping/foldable book making, time can be managed. Through this visual exercise, and the metaphor of the folds of the book unfolding narratives, I want to visualise the orality through the act of curation of the conversations. This will be done by creating a hand-made book as a part of the facilitation where the audience’s oral/narrative response will be recorded and captured through the book and that will be later used in the form of a narrative account of my post-conference write-up.

**Timeline & Guidelines**

10 am to 10.20 am (20 minutes)

- Block party protocol
- Triggers will be given through ideas, quotes, statements and questions and people need to make quick annotations on those in a participatory way
- Re-defining terms through the triggers through the creation of an evolving word-tree which can help in defining/re-defining key terms in design research

10.20 am -10.40am (20 minutes)

- Introducing case studies in a jigsaw kind of way
- Provocative visual café conversations
- Locating inter-connections amongst orality, narrative inquiry, design research

10.40 am to 11am (20 minutes) + 11 am to 11.15 am (15 minutes)

- Creating the dots + Connecting the dots
- Formulating insights through questions around the future of design vis-à-vis the ‘DESIGNER 2025’
- Inter-connecting idea, imagination, interpretation, inspiration and representation through visual mapping and creation of a hand-made book that can be further explored to construct knowledge and develop insights. The form of the book will be guided by the content much like what is asked of, in a design process.

11.15 am to 11.20 am

- Wrapping up
- Synthesis and way forward by opening a blog for the participants where the conversations/dialogues/discourses and debates can be taken forward before culminating into a final piece for DIALECTIC

11.20 am to 11.30

- Re-cap
- Strengthening the synthesis
- Adding layers of insights into the foldable book
Transforming research into action with visualizations

SHEILA PONTIS  
Information Designer

Keywords  
Visualizations, Sensemaking, Field research, Actionable items

WORKSHOP CONTEXT

The role of design research has greatly evolved in the last fifteen years; what was once relatively unknown has become a commonplace practice in many design studios as well as a topic of instruction in many university programs. Simultaneously, the need to understand people’s contexts and behaviors has become an essential step in the design process to create successful solutions. However, many people believe that conducting research involving direct contact with a real audience, and analyzing that research data, is intimidating, time-consuming, and expensive. In some cases, data is gathered but the design team doesn’t know how to make sense of it, which means they end up not using it. In other cases, rich, high-quality data is gathered and analyzed, and findings are communicated to clients and other stakeholders, but then the design team struggles to use these findings to develop or improve upon a solution.

Falling within the doing design research conference topic, this hands-on workshop introduces a set of visualization methods and tools rooted in the disciplined logic and visual principles of information design to provide support to two key steps of the design research process:

1) making sense of research data
2) moving from findings to actionable items to inform the design process.

These two activities are inherently challenging, but they can be even more overwhelming when working with qualitative data gathered in the field, as in the case of using contextual interviews or participant observations. Field data is often unstructured and represents participants’ stories, feelings, expressions, gestures, tones, or behaviors. The goal of this workshop is to help designers and researchers feel confident externalizing and visualizing their thinking, while making sense of data. Working with visualization methods and tools can help designers see hidden connections in the data and articulate ideas in a clearer way. Participants will use visuals to support data interpretation and to communicate thoughts, findings, insights and ideas.

MAKING SENSE OF RESEARCH DATA

While there is no recipe or standard way to analyze research data, the process can be supported with methods and tools that provide structure and stimulate thinking, without prescribing definitive paths or causing distraction. The challenge of visualizing field research data is creating graphics that keep the power of the text, its meanings and emotions, without oversimplifying or misrepresenting the data. During the workshop, participants will use some non-digital methods to help unravel connections, identify patterns and make abstract concepts tangible. The resulting visualizations will help participants make sense of research data to better understand a problem, identify unmet needs, and pinpoint opportunities for design.

MOVING FROM FINDINGS TO ACTIONABLE ITEMS

After data is analyzed, the next greatest challenge is to understand what research findings indicate and use them to support the design process. This challenge relates to the intangible nature of field research findings, often reported as words representing feelings, behaviors, struggles, experiences or motivations. Participants will work first on understanding what they found, and then they will practice visualization techniques to translate findings and insights into actionable items. Finally, participants will use those actionable items to generate ideas for design concepts.

Participants will work with a visualization toolkit that analyze and make sense of field data, as well as help them identify ways to move forward in the design process. To gain practice with this toolkit, participants will work in teams and engage in a series of activities with data sets that have been gathered in advance using ethnographic methods.
WORKSHOP ACTIVITIES

The workshop will be divided into four sessions, with one break half-way through. The first two sessions will focus on introductions, analyzing data and identifying unmet needs, and the last two sessions will focus on understanding how to use findings to inform design decisions. Participants will work in teams of 3 or 4 people to enrich the experience.

Each session will involve the following activities:

SESSION 1: TOOLKIT INTRODUCTION

Learning outcome: Introduce visualization methods to analyze data and identify needs, and present techniques to use research findings to inform design decisions.

This opening session will include warm-up exercises and present the visualization toolkit that participants will work with during the rest of the day. Short exercises will help demonstrate how methods work and provide examples that specifically relate to the kinds of projects that designers might undertake. This session will also be an opportunity for participants to share their own challenges with the analysis and use of field research data to advance the development of their ideas.

SESSION 2: UNDERSTANDING YOUR DATA

Learning outcome: Get familiar with key tasks involved in sensemaking, learn visualization methods to support those tasks and help identify needs, and gain confidence in the analysis and visualization of qualitative data.

Each team will be given a data set collected in advance using ethnographic methods to explore a social issue. One of the main tasks of this session will be to externalize the thinking process and translate words into visuals. Participants will create diagrams, graphs, drawings and other types of visualizations to make sense of the data. They will practice needfinding and define mind maps and journeys to synthesize their learnings. Outcomes of this session are meant to be rough and act as aids to support thinking, and the identification of patterns and connections.

SESSION 3: TRANSFORMING FINDINGS INTO ACTIONABLE ITEMS

Learning outcome: Gain familiarity with visualization techniques to make research findings tangible and understand how research findings can inform the design process.

Working in the same teams, participants will practice one technique to translate findings identified during Session 2 activities into tangible actionable items. Teams will have the opportunity to move forward in the design process and create initial design concepts to address any of the identified unmet needs.

SESSION 4: SHOW & TELL

Learning outcome: Share strategies and techniques to make research findings and insights tangible, and understand the impact of thinking visually in design research.

Each team will share their experience using visualization methods to make sense of research data, and create design concepts. The session will end with reflection and discussion. Participants will receive a handout of methods and techniques explored during the day.

WORKSHOP PARTICIPANTS

The workshop is open to all experience levels, from student to expert, and from any design domain. Ideally, the group will be 9-12 participants with diverse design and research backgrounds. Participants should have a willingness to learn and explore, and previous drawing experience is not necessary to benefit from the experience.
Workshop Outputs

A visual summary or report documenting the workshop and the different outputs generated by each team will be created including:

- Visualizations of field data analysis revealing connections and insights
- Working diagrams and other visual representations created to define actionable items and design concepts
- Visualizations of design concepts or solution ideas to address given problems

Workshop Logistics

Half-day session (3 hours with a range of activities):

- 40 min: Session 1: Toolkit introduction, case study, warm ups
- 45 min: Session 2: Activities
- 45 min: Session 3: Activities + Break
- 20 min: Session 4: Show & Tell
- 10 min: Reflection & Questions

Materials and logistics needed:

- Projector
- Big room, windows and natural light would be great
- For each team: one table, chairs and a whiteboard
- Panels or walls to pin up each team’s working materials and generated outcomes
- Whiteboard markers, black and color sharpies, pens, masking tape, 5 x 5 in. sticky-notes, 4 x 6 in. unruled index cards, flip-chart paper, scissors, glue, rulers

Strategy and Objectives

Session Goal

There is a growing interest and need amongst designers to learn about design research, and specifically how to do qualitative research. This workshop directly addresses this need by introducing visualization methods, which are part of designers’ toolkit, to support the research process. The goal of this workshop is to help participants gain confidence analyzing field data and using findings to support design decisions. By working with visualization methods, participants will learn how to better articulate thoughts and ideas and uncover hidden connections.

The workshop is divided into four sessions, each providing participants with essential tools to achieve the following learning objectives:

- Understand the range of visualization methods that can be used to support field research (Session 1)
- Become familiar with field data and how it differs from quantitative data (Sessions 1 & 2)
- Gain confidence in the use of visualization methods for the analysis of qualitative data and communication of findings (Session 2)
- Learn how to identify needs (Session 2)
- Make research findings tangible and use them to inform design decisions on addressing specific needs (Session 3)
- Recognize the impact of thinking visually in design research (Session 4)

Expected Outcomes

The main outcome of this workshop will be a visual summary or report documenting the different outputs generated during each session by each team. The generation of a variety of outputs after each activity of the sessions will be an indicator that participants were engaged using the methods and exploring different ways of making sense of data. Examples of these outputs are:

- Visualizations of field data analysis revealing connections and insights
• Working diagrams and other visual representations to define action items and design concepts
• Visualizations of design concepts or solution ideas to address identified needs

STRATEGY
The workshop is structured in 45-minute sessions, each focused on different activities building on the previous session. The chosen topic, fast pace, and challenging nature of each activity will help keep participants engaged.

The workshop falls primarily within the Doing design research conference topic. It also falls under Teaching design research as methods and concepts that will be discussed would be accessible for different levels of expertise and participants could later teach some of them.

None of the activities planned for the workshop require specific skills or background knowledge, which would encourage greater participation and a sense of inclusion. Overall, setting up should be straightforward: check that the project works, arrange tables together for 3-4 groups, and prepare materials for each team.

» Decipher Session Timeline & Guidelines

SESSION START

10:00

Session 1: Warm up activity & Introduction of toolkit
Goals:
• Determine participants’ level of expertise with design research
• Discuss the main challenges participants have encountered with design research
• Provide an overview of field research and how visualizations support the process
• Present the tools and methods participants will work with

10:40

Session 2: Activities: Understanding your data
Goals:
• Analyze field data using visualization methods and tools
• Visualize initial patterns, connections, emerging themes
• Summarize learnings and findings in teams

11:25 Break

11:35

Session 3: Activities: Transforming findings into actionable items
Goals:
• Identify key problems or opportunities where design can help
• Make research findings tangible using one visualization method
• Generate design concepts addressing findings in teams

12:20

Session 4: Show & Tell
Goals:
• Share process and techniques
• Discuss challenges and learnings in teams

12:40

Recap & Q&A

12:50

Session ends
(Last 10-15 minutes before start of next session: create quick flip-chart recaps)
Designing as Understanding (&/or the Varieties of Design by Design)

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Keywords
Design methods, design science

ABSTRACT
Design is a profession that lives in both socio-cultural and technical settings. We cannot separate design from people, and as such, there is a need to consider design as a people-centered activity. Design research is not any different; it involves understanding such settings. However, despite many articulations of how designers might understand people, things, places, contexts, cultures, and so on, we continue to let design research be tinted (or tainted?) by traditional methods of understanding from the empirical sciences. While there have been numerous user-centered design approaches and efforts, as well as a number of methods for investigation, the design discipline keeps borrowing traditional methods informed by the sciences that might not be suitable enough to add context and insight to the design process. In addition, working with people requires understanding specific subpopulations and cross generations. How do we define the inherent practice of “design as research”? We lack the language and vocabulary to speak about such methods of making for understanding.

Designers-as-researchers implement interventions, which are inherently a method. But at the same time, interventions produce something consumable that lives, that is designed, and that produces a constant construction of knowledge—over time, across contexts, and in both personal and social ways. Design interventions are research itself. Central to this “making of understanding” is the role of prototyping. By externalizing prototyping processes, designers create interventions that synthesize a point of view and put it out there to let people react, respond, kick it, interpret it, fall in love with it, and provide commentary. Reflecting on these interventions produces new knowledge. Is this really a design method or research method? Is this design itself, meaning design as research?

With this Activity Group, we want to put forward the thesis that design methods and design interventions are not two separate things. We cannot separate methods from design and therefore question the relationship of research to design: Research for design? Research by design? Research within design? Research as design? Furthermore, it is about opening a discussion on the tensions between the concepts of research and design; and present design as a science for empirical research. Design has its own position outside the natural, technical and social sciences. The hard sciences give us knowledge, but that knowledge-making activity separates design from the inherent value of design as a generative and transformative activity. Design itself, its value is to contribute all of them from its own position; it is a science, but we have not yet created an identity for design as a science.

As design educators, we propose an Activity Group to identify and develop the beginnings of a taxonomy and language for Varieties of Design Research. The purpose is to help design educators develop a natural language to engage with each other, to discuss their research, to engage in research with other disciplines, and to help students understand how their tacit knowledge as designers already contributes to ways of knowing as researchers.

We’ll begin with a brief survey of existing research models and a few design research case studies that challenge the existing empirical models. We’ll then engage discussion to collect and inquire about design-led research methods that participants have used or are using actively. From there, we will collectively map out a rough taxonomy of the “varieties of research by design.” This resulting map will be the starting point for a follow-up white paper that attempts to define these design-first research methods.
» Strategy and Objectives

SESSION GOAL
With this Activity Group, we want to put forward the thesis that design methods and design interventions are not two separate things. We cannot separate methods from design and question the relationship of research to design: Research for design? Research by design? Research within design? Research as design? Furthermore, it is about opening a discussion on the tensions between the concepts of research and design; and present design as a science for empirical research. Design has its own position outside the natural, technical and social sciences. The sciences give us knowledge, but that knowledge-making activity separates design from the inherent value of design as a generative and transformative activity. Design itself, its value is to contribute all of them from its own position; it is a science, but we have not yet created an identity for design as a science.

EXPECTED OUTCOMES
At the end of this session, participants will be able to understand:
- Taxonomy on the varieties of design methods toward a science of design
- Strategies for design research education
- Discursive approach for mobilizing future practices of design methods toward a science of design

STRATEGY
This session will engage the audience in a participatory fashion. Participants will be given case studies to exercise as a group. The case studies respond to the conference themes in defining research by doing research. Participants will challenge the concept of design as making while question the conduct of research to inform the things one makes vs. making things as a form of investigation.

» Timeline & Guidelines

GUIDELINES
This session will engage the audience in a participatory fashion. Participants will be encouraged to form multidisciplinary teams and undergo the journey of exercising the session thesis:

- Prototyping is a necessary method of knowing. Rather than borrowing methods from other disciplines, designer researchers make their interventions. This is inherently design.

TIMELINE
SESSION START
11:30–11:35
Introduction & Topic
1) Introduction of Facilitators (Rebola-Wizinsky)
2) Thesis: Design Interventions are a form of Design Research.
3) Overall terminology & Working Definitions

11:35–11:50
Typologies of Design Research/Intervention Methods via Case Studies
1) Challenges of Recall in Research on Human Behaviors. Case Study: Working with Aging Populations
2) Challenges of Access, Top ic Sensitivity, Invasive ness. Case Study: Medical Scenarios
3) New Forms of Knowing through Design Intervention. Case Study: “Buddy”

11:50–12:30
Group Activity
1) Small groups are assigned challenges based on 3 Typologies
2) Groups propose design interventions to engage research on each challenge

12:30–12:50
Discussion, Codification, & Wrap-up
1) Groups share design intervention-methods proposals
2) Facilitators collect and codify intervention-methods
3) Share contacts for future discussion and publica tion
4) Concluding remarks.

SESSION END
Feminist methodologies for human-centered design

ALI PLACE
Designer, educator and researcher

Keywords
Human-centered design, design for social good, feminism, feminist theory, feminist methodologies, marginalized users, diversity, equity, inclusion, representation, social justice

Feminist theory has informed the discourse and praxis of several areas of design in recent decades, most notably architecture, industrial design and urban planning, by providing a lens for examining the role of gender bias in designed spaces and objects. The aim of this conference session is to delineate the ways in which feminist thought can similarly benefit the field of design research, particularly pertaining to communication design, interaction design and product design. Feminism is a natural ally to design given its commitment to such issues as agency, fulfillment, identity, equity, diversity and empowerment (Bardzell, 2010). However, even when pursuing goals that can be described as feminist, designers have neglected to engage explicitly with feminism. Design is present in nearly every area of the human experience today, therefore it is deeply entrenched in patriarchal structures of privilege and oppression and plays a critical role in perpetuating the subordination of marginalized people. Professor and design historian Cheryl Buckley wrote “a feminist approach is neither a side-issue nor a novel historical perspective – it is a central concern of contemporary design” (1986). As designers are increasingly expected to be held accountable for the consequences of their actions (Davis, 2017), there is an urgent need for design to critically examine its role in structures of oppression and explore new methods for achieving equitable design solutions.

Human-centered design has attempted to address this issue by placing empathy and inclusion at the center of its focus, and many of its methods are successful in increasing representation and reducing bias. However, a “human-centered” approach does not necessarily target or elevate the experiences of marginalized people, nor does it explicitly acknowledge the systems that perpetuate their marginalization. Dominant research paradigms assume the universality of a white male-centered experience and use it as the yardstick of unbiased research (Sarikakis, 2009). Attempts to achieve “neutrality” and “objectivity” merely uphold the status quo. In order to serve the real-world needs of all people, a more targeted, systematic approach that engages critically with social problems in an intersectional way is needed. Feminist research paradigms provide a framework with which to operate this approach.

Ideologically, feminism is a movement for social activism that aims to achieve political, economic, and social equality of all people. Feminist epistemologies assert that knowledge itself is socially situated, therefore all knowledge attempts are inevitably enmeshed in the power structures of patriarchal society (Westmarland, 2001). Non-dominantly situated people hold and produce different types of knowledge than their dominant counterparts. Therefore, to obtain knowledge that is representative of lived experiences, research must begin with those who are marginalized. Feminist epistemologies, when applied to design, introduce a new domain of user research – the “marginal user” – which forces us to integrate a new set of methods for user research (Bardzell, 2010). The model must address the ways in which researchers collect and analyze data, the nature of their interactions with research participants and, most importantly, the design problems they choose to address through their research. By drawing on feminist research methodologies, a new model for design research will emerge that elevates the experiences of marginal users and drives action for social justice.

In this activity group, conference participants will collectively engage in the development of a new model for design research that integrates intersectional feminist theory and methodologies. Designers, educators and researchers from all backgrounds will be encouraged to share their experiences, including challenges they have faced in their field and their vision for a new paradigm. Sociologist and researcher Shulamit Reinharz wrote “The feminist spirit is one of breaking free, including breaking free of methodological traditions” (1992). The feminist spirit of challenging the status quo will drive discussion that questions accepted ways of doing and knowing and explores new methods for designing for marginalized audiences. Through collaboration and
co-creation, participants will work toward establishing new best practices for equity and inclusion in human-centered design.

REFERENCES

» Strategy and Objectives
SESSION GOAL
The goal of this activity group is to co-create knowledge regarding feminist methodologies and their application to design research. By inviting many perspectives and experiences to be shared, the group will collectively contribute to a model for feminist design research that can be utilized to reduce bias and discrimination in ethnographic studies. This is a critical conversation that requires collaboration between designers, educators and researchers from a wide variety of backgrounds. We will capitalize on our multitude of perspectives to bring awareness to issues of systemic oppression perpetuated in design and to advance knowledge about intersectionality and feminist research principles. Participants will gain an understanding of existing feminist epistemologies and will contribute to a new feminist model for designerly ways of knowing.

QUESTIONS WE WILL EXPLORE:
What is human-centered design?
What is intersectionality?
What is feminist research? [How does it differ from dominant research paradigms?]
Why is a paradigm shift needed? [What does bias in design research look like?]
What does a model for feminist design research attempt to accomplish?
What are the challenges of implementing feminist methodologies in design research?

EXPECTED OUTCOMES
The outcomes expected from the session will be both tangible and intangible. The tangible outcome will be a model for conducting feminist design research. The model could contain a visual representation such as an infographic, a manifesto of values, a framework of methodologies, or some combination of all three. The intangible outcomes of the session will be personal takeaways that are unique to each participant. They may experience a shift in values, gain a new perspective on existing issues in their field or be inspired to challenge the status quo. Above all, the outcomes of this session will be relevant and actionable in order to drive meaningful change that fosters equity and inclusion in the field of design research. The success of the session will be measured by the effectiveness of the model created and the reactions from the participants.

STRATEGY
The strategy of this session will address the conference topics of doing and defining design research. After a brief introduction to the subject matter, this session will engage participants by leading them through an activity in small groups, then inviting them to contribute to a discussion as a large group.
The activity will prompt them to consider various research scenarios and how they could be approached from a feminist perspective. In small groups, they will discuss which methodologies could be utilized to reduce bias and discrimination in each scenario provided. As they work through the scenarios, participants will make note of their thoughts/reactions on a worksheet. After completing the activity, each small group will synthesize their ideas into a model and/or a manifesto for feminist design research.

Following this activity, participants will come together as a large group to share and reflect. Each group will present their findings. Participants will respond to provocations and offer insight related their specific field. Through an open discussion, responses will be recorded leading to the co-creation of a model for feminist design research.

Inclusivity will be a critical concern during this session. Any participant who requires accommodations to receive the information presented, share their perspective or engage in the group activity will be appropriately assisted with respect and consideration. Voices that are traditionally marginalized in the design field will be elevated during discussion to allow a diverse array of perspectives to be heard.

» Timeline & Guidelines

SESSION START 11:30 AM

5 min
Kickoff
Introduction, session overview

15 min
Presentation
Introduce feminist research, intersectionality, issues of bias and discrimination in design research

20 min
Activity
Break into small groups

Distribute research scenarios, FRM “toolbox,” worksheet
Discuss scenarios, select methods from toolbox
Each group member notes ideas/reactions/values on worksheet
As a group, synthesize individual ideas into one model/manifesto

20 min
Discussion
Share findings from each group
Compile responses on flip chart paper to co-create model for feminist design research

15 min
Reflection
Respond to provocations on screen

SESSION END 12:50 PM

10–15 min
Session recap w/ affinity participants and/or session moderator
How might we teach design research methods to non-designers in order to facilitate multidisciplinary team collaboration?

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Key words: multidisciplinary, collaboration, teamwork, design research methodology

THE EXPANSION OF DESIGN EDUCATION
The field of design is evolving beyond the research and development of objects to include processes, services, and experiences, resulting in the expansion of approaches and mediums. With this growth in the industry, and a changing perception of what design can be, there is an opportunity for design educators to influence outside audiences. Adapting and responding to this growth by extending design’s reach and collaborating with our colleagues from other disciplines outside the school of design has become increasingly important.

THE UIC CLINICAL IMMERSION PROGRAM
The Clinical Immersion Program (CIP) at the University of Illinois at Chicago (UIC) began in 2014. This program is a six-week summer internship for medical and bioengineering students, taught collaboratively by design and bioengineering faculty. The primary goal of the CIP, approaching its sixth year, is to prepare students for the design of medical devices validated by end user needs. The development of medical devices is a tremendous challenge necessitating both a deep understanding of the user and multidisciplinary collaboration. The first step in the user-centered design process is needs identification, in which designers empathize and conduct primary research with stakeholders [e.g. observe and interview patients, physicians, nurses, etc] to identify unmet user needs both implicit and tacit. Historically, for engineering students, there has been a gap between understanding technical requirements and unmet user needs. Commonly this gap arises from a lack of primary research, including observation and interviewing of relevant users prior to concept generation. Thus, the CIP was developed by the Richard and Loan Hill department of Bioengineering at UIC to address this gap by introducing bioengineering and medical students to needs identification and user-centered design methods. The goal of the CIP is to enable students to create more impactful devices by introducing them to needs identification through user-centered design.

THE GAP BETWEEN USER NEED AND DEVICE DESIGN
While (bio)engineers are well-versed in the engineering design cycle, they are less proficient at identifying user needs. This results in a gap between medical device design and true user need. The engineering design cycle historically focuses on the technical aspects of the design, whereas the user-centered design process (also referred to as human factors engineering or human-centered design) emphasizes user needs throughout the process. Today there is a greater awareness and focus on user empathy and applying user-centered design methodology to the development of medical device design and delivery. This approach is based on a deep understanding of the user. Assessing what users need (through observations and interviews) and documenting how they use a product or service enables the designer to look at their experience through a human lens. The goal of user-centered design is to create products and services that are more usable, affordable, accessible, comfortable, compatible, and emotional. Failure to meet user needs in the healthcare industry can have dire consequences, as exemplified recently by the massive recall and FDA-mandated redesign of infusion pumps. The UIC Clinical Immersion Program was specifically developed to address this gap between user needs and medical device design.
WEEKLY DESIGN WORKSHOPS

Our approach to teaching user-centered design to engineering and medical students is to bring these students together in weekly Monday workshops where they learn and work together in a creative environment. The remainder of the week (i.e., Tuesday-Friday), students work in teams and spend time in various clinical environments observing activities that may include surgeries in operating rooms, procedures in hospital clinics, as well as interactions between physicians and patients. In total, students spend 35 hours in hospital clinics each week. The Monday sessions take place at the UIC Innovation Center, where each week, design and bioengineering faculty introduce new lessons in user-centered design. These workshops are designed to be interactive and push the bioengineering and medical students beyond their comfort zone. For example, the first workshop contains an ice-breaker session where students explore communication and needs finding through interactive exercises (see photos). In subsequent workshops, students are taught contextual inquiry methods, such as observation and interviewing techniques, which they apply in their clinical immersion. Every week, each team reports on their findings in the field, including a discussion about opportunities and challenges they experience. Students learn qualitative analysis basics (i.e., how to make sense of their research data), then arrive at insights about their clinical experiences. It is from these insights that they begin to develop needs statements about specific problems they identify. Finally, students learn and practice ideation methods such as storyboarding, word storming, sketching and prototyping. The six-week internship ends with the teams’ presentations of their findings in the clinic, needs statements and initial concepts and prototypes to address those needs.

THE IMPACT OF TEACHING DESIGN TO NON-DESIGNERS

Multidisciplinary collaboration allows our colleagues outside of the field of design to have an opportunity to learn principles of design and apply those principles to solve a variety of problems. With that, they can develop valuable new skill sets that can be both used within their own field and on interdisciplinary teams. When designers work on teams together with colleagues from other areas (instead of following a more traditional linear or “hand off” process)
» Strategy and Objectives

How might we teach design research methods to non-designers in order to facilitate multidisciplinary team collaboration?

ACTIVITY GROUP

This is a hands-on session where participants will explore the use of design research methods, tools and techniques in an unfamiliar and non-obvious environment, such as a medical clinic. We will share the design methods we teach in the University of Illinois at Chicago (UIC) in the Clinical Immersion Program. The goal is to encourage the expansion of design education outside the design school walls.

Our activity group will be based on our Clinical Immersion Program (CIP), a six-week summer internship for medical and bioengineering students that we (design and bioengineering faculty) co-teach at the University of Illinois at Chicago. The primary goal of the program, approaching its sixth year, is to prepare students for the development of medical devices through validation of end-user needs.

The field of design is evolving beyond the research and development of objects to include processes, services, and experiences, resulting in the expansion of approaches and mediums. With this growth in the industry, and a changing perception of what design can be, there is an opportunity for design educators to influence outside audiences. Adapting and responding to this growth by extending our reach and collaborating with our colleagues outside the school of design has become increasingly important.

Multidisciplinary collaboration allows our colleagues outside of the field of design to have an opportunity to learn principles of design and apply those principles to solve a variety of problems. With that, they can develop valuable new skill sets that can be used both within their own field and on multidisciplinary teams. When designers work on teams together with colleagues from other areas (instead of following a more traditional linear or “hand off” process) there is a greater likelihood that new products, services, and experiences that result from this collaboration will better meet the needs of the people who use them. Overall, the

ENDNOTES


4 Michael E. Wiklund, Stephen B. Wilcox, Designing Usability Into Medical Products, (Boca Raton, CRC Press 2005)


REFERENCES

goal is to not create more designers, but to expand design education beyond the walls of design schools by sharing design research instruction, tools and processes.

In our activity group, we will present a problem to the participants in the form of scenarios and student research from the program. Participants will then form teams and engage in activities taught in our weekly workshops in the Clinical Immersion Program, just at an accelerated pace [see timeline].

These activities will consist of the following:

- **Storyboard and Sticker Interview**: participants will create a storyboard of a doctor visit (individual activity), then interview in pairs, attach stickers to items, to understand pain points (this serves as both an ice-breaker and tool introduction)
- **Primary research**: participants will be shown images from primary research (clinical observations) from a CIP team’s research (e.g., OB/GYN)
- **Needs statement**: we will introduce a framework, discuss components, then participants will work as a team to write their own needs statement based on the research presented
- **Ideation**: “crazy notes” activity. In teams, participants will ideate around certain words from their needs statement, write ideas on post-its and share on flipboard

**EXPECTED OUTCOMES**

We will invite participants to walk through the design process we teach to bioengineering and medical students in the UIC Clinical Immersion Program with the hope of generating discussion about the value and need for this type of multidisciplinary collaboration in university programs. In order to assess the impact of our activity group we will ask participants to share their thoughts about the session and their experiences in the field. In our wrap-up discussion we will gather this feedback and aggregate examples of best practices from other university programs where design is taught outside the school of design.

The key questions we’d like activity group participants to explore during this session is how might we share design methods, tools and instruction with our colleagues outside the walls of traditional design education? How might this instruction improve multidisciplinary team collaboration? What is their reaction to the methods presented in the activity group?

**» Timeline & Guidelines**

11:30 am - 12:50 pm Saturday 9/29

**SESSION START 11:30 am**

**WHO:**

**INTRODUCTIONS**: 11:30 - 11:40 am

Facilitators introduce themselves as do activity group participants. Divide into teams by tables

Briefly describe UIC Clinical Immersion Program. Present overview of history, goals and evolution of the program. [slides - AEF]

**WHAT:**

**TEAM ACTIVITIES**: 11:40 am - 12:30 pm

- **Storyboard and Sticker Interview (15 min)**: participants work in pairs (one is interviewer, one is interviewee) on a storyboard about a doctor visit (SS), interviewer asks questions and draws storyboard, while interviewee attaches stickers to storyboard. Helps understand pain points (serves as ice-breaker and tool introduction) [KW bring in pre-printed stickers and pre-printed storyboard framework (8 panels per page)]
- **Primary research (5 min - SS)**: present slides of student team observations from a clinical environment (e.g., OB/GYN)
- **Needs statement (20 min - AEF)**: handout framework tool, discuss components, ask participants to write needs statement as a team; show them what students came up with and share out
- **Ideation (10 min - KW)**: “crazy notes activity” - separate out ideation to certain words from needs statement (pair), put ideas on post-its and put on flipboard beneath needs statement framework (team)
WRAP UP: 12:30 pm - 12:35 pm
• Present (1 min each, 5 teams - ALL): needs statement and ideation (teams choose two best examples)

DISCUSSION: 12:35 - 12:50 pm (ALL)
• Feedback on the session: what worked well? What didn’t work well?
• What resonated with participants: relevance and application?
• Share best practices and examples
• How might participants integrate these methods/activities in their own curricula?

The residue of interaction: reflecting on the impact of working with real people in design (education) and exploring the potential of designing for one

ANDREA WILKINSON
Designer-Researcher from the LUCA School of Arts in Genk, Belgium

Keywords
user participation; designer experience; design research; designing for one; design participation; participatory design; co-design; design education research; education; design reflection

THEME/TOPIC: DOING DESIGN RESEARCH
Based in an educational context and related to areas of participatory design and research through design [Zimmerman et al., 2007], this workshop will reflect on the design research approach designing for one (Wilkinson et al. 2017) and how it promotes student agency, establishes a space for alternative learning outcomes and creates an opportunity for meaningful, cross-discipline initiatives both in and outside of the classroom. Next to this, the results of the workshop will be disseminated and further reflected upon as part of a wider ongoing research in this area.

SHIFTING FROM DESIGNING FOR USERS TO DESIGNING WITH INDIVIDUALS; WHERE THIS WORKSHOP SITUATES ITSELF
Increasingly over the last decade, the notion of working together (co-design, co-creation, participatory design, user-centered design, human-centered, etc....) with users has become synonymous with an idea of ‘better design’. Drawing on ideologies aligned to Participatory Design that suggests that design should support the marginalised or underprivileged [Star 1990] and should “empower groups of people whose views, opinions and needs might be the most ignored by mainstream society”[Vines et al. 2013], the idea of designing for one that is explored in this workshop focuses on both the Extra-Ordinary User (Pullin and Newell 2007) as well as individual regardless of level of marginalisation.
Different to the process of designing to needs requirements that have been created based on second-hand accounts and demographics from particular user groups or referenced from personas (a research-based fictional character often used as a reference point within design), *designing for one* allows student designers a closer look into the everyday needs of individuals. Next to this, initial research suggests that there are particular experiences within this process that lead to specific types of learning and this supports the idea that there are genuine benefits to engaging with diversity (Pal 2017). Although the methods used within the process may be similar to that of other design approaches, i.e., a designer may propose going for a walk (guided tour) or follow along (shadowing) or try to visualise a segment of a person’s life (storyboard), each student experience is unique. In the projects that are discussed in this workshop, the student designer’s focus is to generate bespoke designs that suit one person in particular, paying particular attention to his/her physical abilities, access to technology, social relationships, interests, needs and wishes. Initial analysis has shown that this encounter modifies the student’s design direction and impacts the designed artefact that is created. The interaction with their participant also increases the student’s motivation. However, as of yet the research has not touched on *designing for one’s* further potential within design education. Instead of focusing purely on methodology, this workshop will focus on the experiences within the design research process that not only shape or influence the thing being made, but also inform a student’s future practice.

**INTENDED AUDIENCE**

The intended audience of this workshop are designers of all flavours (from product to critical to interaction to graphic) with specific focus on design educators. Specific prior knowledge or experience in co-design/participatory design is not necessary as the workshop has specifically been created to welcome the voice of a wide range of participants.

**EXPECTED RESULTS AND OUTCOMES**

The goal of this workshop is to identify and articulate the value of working with individuals and how this might best be utilised within design education (and to what aim) as well as the potential of its use within industry. Drawing upon a collective brainstorm activity, the results will be documented through an activity loosely based on MAP-it [see: http://www.map-it.be]. This method helps to visualise discussions between groups and attempts to provide parity between the voice of different participants. The results from each step are gathered and visualized on the collective ‘maps’, or workshop document.

The workshop will ground itself initially in this idea of the designer’s own experience. As a group we will reflect on and share how individuals and their own real-life contexts have impacted our own design practices; ‘profound’ experiences and insights that shaped (or continues to shape) our design ideology, approach, way of working, etc.

Moving from personal reflection to analysis, participants will then analyse a student’s own experience. These ‘student project stories’ will detail a real student’s project: their process, the methods they used, a description of the individual they worked with and what they made as well as quotes in their own voice.
Building upon these project descriptions and the participants’ own expertise, participants will identify what this approach offers to design education by identifying what types of learning has and can be achieved, where this would best situate in the design curriculum and propose best-cases in terms of organizations and people-groups for working in this individualized approach.

The outcomes of this workshop will be documented by a local filmmaker as well as written up by the facilitator within the context of her doctoral research. The films will include an overview of the actions of the workshop (summary) and interviews of participants reflecting on their experience in the workshop and the potential for this approach within education and practice.

REFERENCES


**EXPECTED OUTCOMES**

The outcomes of the workshop relate to the learning objectives.

The workshop will deliver a collection of personal stories about the inherent impact of designer experiences (and thus the potential of these) contrasted against what students are learning through this designing for one approach. Next to this, this ‘learning’ will be contrasted against the proposed future trends and competencies that the field (and thus within design education as well) need to have in order to prepare students. Finally the workshop’s intent is to inspire participants to explore the new disciplines/areas proposed in the workshop within their own design education practice.

Concretely the workshop will be documented per group by audio, visualized via the mapping document and some participants will be filmed individually.

**STRATEGY**

Referring to the theme/topic ‘Doing design research’, this workshop situates itself to to areas of participatory design and research through design (Zimmerman et al., 2007) within the context of design education. More specifically, this workshop will reflect on the design research approach designing for one (Wilkinson et al. 2017) and how it promotes student agency, establishes a space for alternative learning outcomes and creates an opportunity for meaningful, cross-discipline initiatives both in and outside of the classroom.

Next to this, the results of the workshop will be disseminated and further reflected upon as part of wider ongoing research in this area.

In order to engage participants, the workshop will use a collective brainstorm activity based on MAP-it [see: http://www.map-it.be]. This method helps to visualize discussions between groups and attempts to provide parity between the voice of different participants. The results from each step are gathered and visualized on the collective ‘maps’, or workshop document and during various stages, each participant must voice his/her contribution either through writing, discussing or placing something on this map. In order to ensure that the workshop runs to time and delivers the intended result, the workshop flow has been tested with other researchers.
A MORE DETAILED OVERVIEW OF WHAT WILL BE DISCUSSED IN EACH POINT IS LISTED BELOW.

1) Participants are given a reflection worksheet in which they will be asked to reflect on their own experiences:
   - When did they work together with another person and this interaction impacted their design practice?
   - When did working together with an end-user lead to a ‘design insight’ that has stuck with them or changed how they work or do research?

2) Having broken into small groups of 4-5 participants will...
share these experiences with each other. After this exchange, participants will gather keywords that summarize this ‘lasting impact’ on the mapping document. What type of experience was it? What skills were gained or was it a gap that was identified? How does this experience shape their educational practice?

3) Participants will then each receive an individual student project which details who the student is, what they are studying, what year they are in, who they were designing together with, what they made as well as a collection of quotes from their own reflections. After the participants have read their student project description, they will suggest a fictional title for the brief the student was responding to; including a short brief summary one-liner that describes the intention of the brief (what the project trying to do).

4) Participants will then introduce their brief title and one-liner to the others in their group, placing it on the mapping document. After doing this, they will tell how their student responded to this ‘brief’ by summarising the student’s project/experience in their own words and by identifying and sharing one of the quotes that stands out to them or resonates with them to the rest of the group.

5) Based on their own reading and understanding of the student project, they will then suggest what their student ‘took away’ from the experience in terms of learning, design skills he/she used and/or knowledge gained as well as what he/she might have taken away in terms of other design or human values.

6) Next, the group will propose, based on the information they have received, how this class this student took might differ from ‘typical design classes’ in their own institution in terms of timing, interaction, location, context, etc.

7) Building upon these points of difference participants suggest courses/classes in their school and local organisations or social contexts which they feel would benefit from this approach both within their own community or in terms of wider context.

8) If time allows, in reference to the AIGA Designer 2025’s trends and competencies whitepaper, the group will, after discussion, pick 2 of these headings and articulate how this designing for one approach supports these competencies (referring to ‘their’ student projects and the student takeaways/experience).

9) In closing, each participant will identify an areas of the workshop that they rate as being valuable. These will help to identify what aspects of their reflection that they want to share later with the facilitator.

If time allows, a group representative will share the results with the other group(s).

Remaining time will be given to film a collection of participants to reflect on the workshop and or set up a time to interview the participants.
Practicing Design Research in Industry: methods, challenges and outputs for stakeholder buy in

KIRSTY BLAZO
Customer Experience Consultant

Keywords

DEVELOPING AND INSTILLING STRATEGY, METHOD AND TOOLKIT FOR MOST EFFECTIVE COMMUNICATION OF DESIGN WITHIN AN ORGANIZATION

Submitting this topic for the facilitation of an activity group with intended audiences of:

1) Designers or others interested in the design process within organizations, promoting and utilizing design within their organization to solve complex problems
2) Design students who are aiming to work in industry as designers and advocate for design within their organizations
3) Experienced Designers within organizations who are responsible for communicating research intent and results to stakeholders at various levels throughout the business

As design researchers in industry, we are expected to connect corporate strategy to design recommendations, determining not only what is most practical for customers, but also the most valuable business venture. In this, our roles extend beyond research, analysis and design, to a solid interpretation of business needs and strategy, and the communication of our process and findings via effective reporting and design tools. It is not enough just to “do” research. We are required to communicate what we are doing and how we are doing it. And most importantly, we need to create a convincing argument for our findings in a language that is understood by our corporate clients, providing effective communication to multi-level and multi-disciplinary stakeholders.

Stakeholder communication and engagement can be a project in itself and most effective when it occurs throughout the research journey, not only at the end. Business stakeholders are typically results-oriented and seek progress updates for reassurance in their investment. Our non-linear approach and openness to multiple solutions contradicts this and causes uncertainty and stress to those unfamiliar with it. Acting as design consultants, a significant portion of our role therefore becomes client management: hand-holding, encouraging a “trust” in the process as we scramble down a non-linear path of which the answer is unknown and journey uncomfortable. I have been a witness to many projects pulled in competing directions by stakeholders, losing intent and focus, due mainly to a lack of understanding of and/or faith in the process.

I am a strong believer in Participatory Design within organizations as a most effective approach toward buy-in and implementation of design research and solutions. Effective facilitation of business stakeholders can result in more appropriate design solutions and stronger buy-in, ensuring dissemination of the research results.

A single design research project might have several types and layers of business stakeholders with a range of desired results from the research and each requiring a different level of engagement. This could include: product owners (possibly a product development team), marketing and/or market research, a digital design or user experience team, customer support, and increasingly, a customer experience team. A stakeholder engagement approach is dependent upon asking the right people the right questions and knowing who needs to make which decisions. It is equally important to know how not to include a stakeholder as it is to know how to. If they are not expected to know something based on their role and/or exposure to customers, we should not ask this of them.

Drawing on several years of experience as an external researcher and consultant, hired by organizations in Australia and the US to learn more about their customers, users and occasionally employees, I have developed the start of a toolkit of activities to aid stakeholder buy-in. The most effective method I have found to employ these activities is via a series of short workshops throughout the course of a project. A workshop setting can provide equal opportunity to each of its participants and allows for multi-disciplinary and multi-level collaboration.
It is important to explicitly note here that this session will be active, and I will employ the same philosophy I apply to my work with clients. I will not begin the workshop with the answers, but only with a baseline set of prompts. The purpose of the session is to create something new and improved, as a result of the combined input from the workshop participants.

**DESIRED OUTCOMES OF THE SESSION**

- Participant understanding of types of stakeholders within an organization and ways for including them in the design process most effectively
- Identification of phases of research adoption
- Development of new ideas for stakeholder engagement throughout a project
- Development of frameworks and boundary objects to engage stakeholders

**ABOUT ME**

I work as an external consultant, helping organizations to better understand their customers and develop appropriate design solutions and strategies in the areas of User Experience, Customer Experience, Digital Design and Service Design. My approach comes from a multi-disciplinary background in Design, Anthropology and Industrial and Operations Engineering. I am interested in the intersection between design and organizational strategy and how people make sense of their roles and work within organizations. I have previously studied and presented on “Engineers as Design Participants”.

I would like to share my own findings and then expand on them, using the expertise and passion of the participants in this session to progress toward a robust facilitator “toolkit” for stakeholder sessions. We will spend 2.5 hours workshopping through some of the more common challenges, creating new activities and tools in the process.

We will aim to cover the following via a short review and then a series of activities shaped around understanding and designing for the business stakeholder:

- Review of typical project goals and restraints for customer experience research
- Review of primary and secondary stakeholders, their roles and suggested inclusion
- Discussion on the role of design in business, including authority and contribution
- Identification of design research scenarios and common issues with communicating process and results
- Practical examples of previously-used stakeholder engagement activities and tools
» Strategy and Objectives

SESSION GOAL
This session aims to utilize a collaborative approach to further develop strategy and a toolkit for incorporating business stakeholders in a design research project. The guiding hypothesis for this is a belief in participatory design as a way of ensuring adoption of research findings within an organization.

KEY QUESTIONS:
• How can we support adoption of design research findings within an organization?
• How can we best involve business stakeholders in our design research projects?
• What design tools can we develop to best communicate design research findings to multiple levels of stakeholders?

KEY LEARNING OBJECTIVES:
• Stakeholders within an organization who are likely to be involved, their roles, objectives and concerns
• Current practice examples of methods and activities used in business projects today

EXPECTED OUTCOMES
• Participant understanding of types of stakeholders within an organization and ways for including them in the design process most effectively
• Identification of phases of research adoption
• Development of new ideas for stakeholder engagement throughout a project
• Development of frameworks and boundary objects to engage stakeholders

STRATEGY
• The session will run through a variety of individual and group activities, discussions and presentation of findings
• The variation of activities will accommodate varying learning styles and personalities, ensuring participation from all
• The session will begin with priming activities, centered around gaining an understanding of requirements and current approaches. The second half of the session will use this understanding to explore new solutions regarding stakeholder participation and buy-in.
• The activities will center around the topic of supporting research within an organization, focusing on engaging stakeholders as a main objective

» Timeline & Guidelines

INTRODUCTIONS & ICEBREAKER (10 min)
Activity TBD
(individual + share with group 10 min)

CURRENT UNDERSTANDING (first half)
Review of typical project goals and restraints for customer experience research &
Review of primary and secondary stakeholders, their roles and suggested inclusion
(presentation 10 min)

FUTURE SOLUTIONS (second half)
• Stakeholder management tips and idea generation
• Creation of phases of research adoption within an organisation
• Development of toolkit for communication of process and findings

SESSION END
(last 10–15 minutes before start of next session: create quick flip-chart recaps)
Getting to Alignment: A Quickly Consumable Design Research Roadmapping Tool

MEENA KOTHANDARAMAN
Qualitative Researcher

Keywords:
Design research, research strategy, research mentorship, stakeholder collaboration

BACKGROUND
As design research consultants and educators, we are acutely aware of the realities of positioning research as an asset to design processes. Our perspective is that research not only provides an opportunity to gather knowledge of consumers/users, but it is also a meaningful alignment moment that help projects become more inspired and informed.

• We propose facilitating a highly interactive workshop under the Supporting Design Research track. We have centered the workshop around the NCredible Framework, a simple and easily consumable 2x2 matrix with which cross-functional teams engage.
• The workshop is best suited for the Supporting Design Research track. Additionally, it is relevant to Disseminating Design Research (by advocating for design and design research agendas within the context of larger inter-disciplinary projects or research groups and sharing design research across channels that engage diverse audiences) and Doing Design Research (by creating research agendas, and identifying and framing opportunities, contexts and variables).

RESEARCH BAD HABITS
Design research practices embedded in business contexts have matured to a problematic inflection point. Called upon as a means of finding answers to human complexities, research is often measured against misappropriated metrics of success. Time, money, efficiency, and return on investment have been artificially applied to demonstrate its value. While these metrics are meaningful to businesses and institutions, they can diminish the credibility of the processes that get to human descriptions.

• This false tie leads to tendencies behind research practices that no longer service the domain of design research, rather, they hurt it. Leading with method, over-simplifying complex human dynamics, misaligning questions with objectives, and setting unrealistic expectations of data gathering are just some of these responsive tendencies. Research can no longer be a gratuitous technique, conjured to help others get their work done. Research must assert its strategic presence.
• In this workshop, the facilitators will share a quickly consumable framework that helps researchers establish that strategic lens. This workshop will reveal a demonstrable approach for permeable success of research as a strategic practice within an organization. Distributing the research mindset, teaching the mechanics of good study design, and providing a “parking lot” for as-yet answered questions are just some of the benefits attendees can immediately apply.

ABOUT THE NCREDIBLE FRAMEWORK
The path to rationalizing how questions are addressed can often be confusing to non-researchers. The NCredible Framework is a visual tool that exposes details required to construct credible study designs. The Framework:

• Organizes unknowns
• Brings awareness to assumptions
• Publicizes knowledge gaps
• Assesses organizational research habits and patterns
• Visualizes a research road map
• Positions research studies across time and budget
• After selecting a research study from the road map, researchers can bring further clarity to elements needing description for study design (sample, context and dynamic). Beyond its benefits in establishing the mechanics of a study design, the workshop has proven to shift internal mindsets about research.
WORKSHOP FORMAT AND ROOM CONFIGURATION

The workshop is flexibly designed to accommodate a time slot as little as 2 hours, and up to 6 hours. The facilitators believe a 6-hour workshop would work best for Decipher attendees. The room should have up to 4 tables to accommodate up a maximum of 20 attendees. A projector, plenty of wall space (for posters), and supplies such as Post-its, sharpies, and masking tape are needed for the workshop. If the workshop is 6 hours, then at least 1 hour should be designated for lunch (if eating off site). Workshop attendees will receive an electronic version of all course notes that mirror the presentation materials.

WORKSHOP FLOW AND ACTIVITIES

The NCredible Framework Workshop activities are highly engaging, fostering rich discussion among attendees. Because studies can be nuanced, these discussions help attendees realize the most crucial talking points they would need to articulate for a credible design research program.

1) Room introductions by sharing research challenges. The facilitators will kickoff the workshop with an open and therapeutic discussion of common research challenges. Attendees realize they are not alone in their issues, and can feel disarmed to discuss realities that impede their design research processes.

Figure 1. The NCredible Framework, the central tool around which the workshop discussion and activities are structured; © twig+fish research practice.

Figure 2. Attendees share their research challenges to introduce themselves, the facilitators note common themes, and attendees develop an immediate bond over these challenges. Photo credit, twig+fish research practice.
2) Engage with the NCredible Framework with a sample case study. Attendees will each have 3-5 Post-its with pre-written questions from an actual case study. Each attendee will have 2 minutes to place Post-its on the framework, and the room will discuss whether or not they believe the question, as written, is intended for its particular placement. The room begins to realize that the wording of a question may not always match the intent of the ask. They can re-write questions, or plot them as-is to demonstrate a point about the variety of design research engagements.

3) Reflect on internal research patterns and discuss compensations for habits. The facilitators will share 7 patterns of research habits and attendees will reflect on those that best represent the ones they experience. The room will then share best practices on how to break these habits.

4) Design an example study. If a 6-hour workshop is offered, the facilitators will break the attendees into small groups to design a study based on question clusters plotted on the framework. Each small group will share the rationale for their study design as well as an idea for the methodology. In the 2-hour workshop, the example study will not be designed.

BENEFITS AND OUTPUTS FOR ATTENDEES

Attendees will leave the course equipped with a simple and visual analog tool that helps them share the potential of design research, as well as promotes good practices toward the creation of credible studies.

The instructors will guide attendees through the framework principles, and share how to form credible studies that orient all consumers of research to a common goal. Beyond being a
research practices using the construct as a communication tool. Non-researchers who attend should see strategic potential for leveraging design research in their organizations/institutions.

REFERENCES

» Decipher Session Strategy and Objectives

SESSION GOAL
The interactive workshop will teach attendees the techniques and talking points that allow teams to describe the full potential of design research against learning opportunities.

Many design teams know just enough about research to be dangerous: they acknowledge its benefits and generally know its processes. However, the high-level benefits are not enough to sustain and evolve the practice. We have seen stagnating teams that run one-off studies, but do not know how to position their work against a broader backdrop or learning potential. This workshop provides a simple-to-consume, public visual that allows researchers and non-researchers understand what lens of inquiry they need to consider to address their research questions.

Attendees will interact directly with the NCredible Framework throughout the workshop. They will plot example research questions and learning needs onto the framework and discuss their rationale for study design. Attendees will learn how to talk about the framework, and share ideas on how they might apply it to their business.

EXPECTED OUTCOMES
Attendees will know how to use a framework to position each study they execute against a broader strategic landscape of learning.

We often follow-up with attendees via Twitter or other social media to see how they are applying the NCredible Framework and how it might be improved.
STRATEGY

Hands on activities, reflection on real-life practices, lecture, and small group work. The workshop is best suited for the Supporting Design Research track. Additionally, it is relevant to Disseminating Design Research (by advocating for design and design research agendas within the context of larger inter-disciplinary projects or research groups and sharing design research across channels that engage diverse audiences) and Doing Design Research (by creating research agendas, and identifying and framing opportunities, contexts and variables).

Attendees share their own experiences that then tailor the lecture portion of the workshop. In addition, they will be able to interpret research questions into meaningful study scopes, and design their own study rationale.

» Timeline & Guidelines

SESSION START (on the hour or half-hour)

Saturday, September 29, 2018

Setup at 1:50PM

Affinity participants will be asked to help set up, put one set of Post-it notes and Sharpies per attendee.

Research through Design: Prototypes as Forms of Investigation to Explore Energy Efficiency in Low-Income Communities

CHRISTINE MILLER
Researcher and Educator

THOMAS MANJARRES
Mechanical Engineer

VINOD KIZHAKK
Design Strategist and Technologist

XUANBAI LI

Keywords
Multiple disciplinary, hybrid teams, sociotechnical systems, theory in design research, prototypes

INTRODUCTION

We seek to engage in conversations about the diversification of design through a study of a sociotechnical system involving a diverse set of stakeholders. The project was the focus of an multiple disciplinary prototyping course of design, business and engineering students at Illinois Tech’s Institute of Design. Sponsored by utility provider Peoples Gas, and working with their contractor, Franklin Energy a provider of grid optimization services) the challenge was to explore ways to increase energy efficiency (EE) program effectiveness within low-income communities in Chicago.

The diversity of stakeholders combined with the multiple disciplinary nature of the research, required accommodating different ways of thinking and doing research and engaging new forms of knowledge and skills to explore the complex nature of the situation. Teams chose three sectors within the communities as lenses through which to identify physical and invisible barriers: multifamily residences, small businesses, and education. We will discuss the entry process and flow barriers for multiple discipline teams, how the client perspective transformed over the course of the semester, and what strategies and tactics were successful, and not so successful, for collaboration. We will also touch upon
the teams’ initial insights and discuss how the different team lenses presented the clients with completely different ways to approach understanding what they considered the problem of low pick-up rates of EE programs in low income communities. Teams developed prototypes as forms of investigation to deepen their understanding of study subjects and their daily lives, and other stakeholders, and to evaluate and push ideas and concepts forward. We welcome the opportunity to facilitate this conversation, especially to explore how to develop practical and theoretical perspectives around design research.

BACKGROUND

We are interested in facilitating conversations about defining, teaching, and doing design research. We use experiences from a recent client-sponsored project to propose conversations around trends and competencies recognized in the AIGA Designer 2025 summary document. Specifically, we are interested in conversations around the role of multiple disciplinary teams in design research to provide a variety of perspectives and “modes of inquiry” that allow for applying multiple lenses to explore complex problems. We are also interested in facilitating conversations about how, through design research, abstract construct such as “energy efficiency” can be understood from the perspective of the wide range of actors in the energy system. Although not a new topic, we found that prototypes as forms of investigation were invaluable in terms of creating boundary objects (Bowker & Starr, 2000; Starr, 2010) that generated opportunities for discussion and exchange within the research teams, client, and study participants. A brief description of the challenge presented by the client reflect many of the concerns and issues highlighted in the AIGA Designer 20125 summary document.

THE CHALLENGE

Franklin Energy, a for profit organization that develops and implements Energy Efficiency (EE) programs for gas and electric utility companies approached IIT’s Institute of Design (ID) and Stuart School of Business with the challenge to help them rethink their current Energy Efficiency programs, particularly in low-income communities. ID convened a multiple disciplinary course comprised of design, business
Our teams quickly recognized that the problem posed by Franklin Energy was embedded in a complex network of relationships and actors (Callon, 2007) that included energy utility providers, residential, institutional and industrial customers, companies such as Franklin that service the utility providers, state regulators, and a broad range of energy consumers. Carlos Teixeira (2017) described these types of complex actor networks as “the new frontier in design”: artificial (human-made) systems such as energy, and multi-systems integration, such as energy and urban housing in low income communities. Through primary and secondary research, students confronted the multidimensional nature of the problem that manifested, for example, in cultural practices and social relations in Chicago’s China Town small business community, and the economic disparity reflected in the “high energy burden” common in low-income households as seen in Fig. 1.

The Multifamily Dwelling team learned about the relationship between property owners/manager and tenants who in most cases were energy consumers rather than customers, which led the team to form the hypothesis in Fig. 2. A lack of information (“I don’t know”), a lack of transparency (“I can’t see it”), a lack of concern because they were directly responsible for the bill (“I don’t care”), and, since central boilers are common in many multifamily properties, a lack of control influenced tenants’ attitudes and behaviors towards energy usage.

REFERENCES


» Decipher Session Strategy and Objectives

SESSION GOAL

What we want to achieve...

- Further discussion of what Carlos Teixeira described as “the new frontier in design”: artificial (human-made) systems such as energy, and multi-systems integration, such as energy and urban housing in low-income communities.
- Further understanding of the “diversification of design” through studies of sociotechnical system involving a diverse set of stakeholders and hybrid design teams.

We pursued the opportunity because it’s impossible to see everything you need to see if you’re embedded in “the industry” – how complex the system is. We become blind to how things really work. Partial vision is the problem - client, other stakeholders. (Franklin Energy client)

- Initiate a discussion on the role and application of theory in design research (theory through design; theory in design).

- In this conversation, we will ask participants to consider:
  » Dynamics are a major concern in diverse “hybrid” teams. Can we make transdisciplinarity “work” in multiple disciplinary design research? If so, what does that look like? When is it important?
  » If the diversification of design increasingly involves the use of hybrid teams, how might we prepare team members for managing the dynamics of multiple disciplinary perspectives that are often in conflict? What are strategies for integrating designer and non-designer skills, tools, and knowledge traditions?
  » How can we ensure that the design process is inclusive of all stakeholders? How can we ensure that outcomes and proposed solutions balance the needs of all stakeholders? Reflect the diversity of stakeholders?
  » If the future of design involves engagement in complex systems and the integration of these systems, will the future of design research require more intellectual rigor? What strategies might be used to introduce...
theory and theoretical concepts, such as artificial (i.e. sociotechnical) systems prior to, during, and after design research projects?
» What is the role of theory in design research? What theories can we draw on to give design research explanatory power? When might theory be applied? When is theory generated?

EXPECTED OUTCOMES
• Google drive - Participants will be invited to access a google folder where digital versions of the posters and other project materials are posted. This will allow participants to continue the conversation after the session is ended.
• One or more working groups around the interests of our audience that might include:
  • Diversity and multiple disciplinary, hybrid design research
  • Design theory and theory in design
  • Design research and practice of artificial systems
• We consider the session to be a success if we have a high level of engagement among participants during the session. At the conclusion of the conversation, are participants interested in furthering collaborative connections? We will have posters of the project timeline and main findings from the three teams and provide time during the last 10-minute wrap-up for participants to add comments. We are also preparing a short participant survey the end of the session.

» Timeline & Guidelines
Date: Saturday, September 29th, 2018, Time: 2:00 PM - 2:50 PM
Before 2:00 PM Participants are able to view printed material (posters of timeline, project outcomes)
Audience: Design educators, students, and design practitioners who come with different levels of experience and expectations for the session.
Materials: Posters, Intro to the project, High-level views of the project (value web representing the overall socio-technical system), design process and timeline, outputs.

The materials we are going to make available or post will give the audience an idea of the context and what was accomplished. We can use this time to show the things that we are not able to present due to time constraints, but still related to our work.

To encourage engagement, the posted materials will invite participants to interact with the content by posting comments.

2:00 PM - 2:15 PM Presentation about multidisciplinary research in EE program
Key message: For the presentation section, we will discuss experience of working in multiple disciplinary teams
  • Why a multiple disciplinary approach?
  • How do non-design background students quickly learn about design research methods
  • How do they make use of their background knowledge to support the research
  • Strategic change before/ after the design thinking is involved
  • What are design students’ unique value during the project
For business/ engineering students on the project, what was their experience?
  » How do they learn the design process and methods,
  » What’s the difference comparing with the ways they worked before
  » How their background support them during the project

2:15 PM - 2:20 PM Break, prepare for the discussion (We may give them longer time for the interaction?)
Question: How are we going to set up the space?
After having a deeper understanding of the project and interacting with our posters and printed materials, we will shift into the discussion through provocations.

2:20 PM - 2:45 PM Discussion about the topic
During the discussion, we may ask questions about how to
optimize our existing design process, methods and tools, how do you think prototyping can help the design research section in the project.

2:45 PM - 2:50 PM Conclusion and wrap-up
We are preparing a short participant survey for the end of the session. Participants will be invited to access a google folder where digital versions of the posters and other project materials are posted. This will allow participants to continue the conversation after the session is ended.

Cultural Responsibility in Design Research

MINDY MAGYAR
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Keywords:
Cultural responsibility, cultural sustainability, cultural appropriation, design research, design education

INTRODUCTION
Today’s cultural unrest, both nationally and globally, has highlighted long-standing, systemic inequity marginalizing entire populations across industries and continents. As organizations and nations reckon with problematic histories, design too should reflect on its practices and responsibilities. Design outcomes, whether 2D, 3D, or experiential, impact consumers and—for better or worse—society. We use the phrases like “systems thinking” and “behavior change” to describe our work. Yet in a world rife with cultural discord, we can certainly do more to dampen harm and even facilitate harmony. Cultural appropriation even indicates that existing gaps in cultural awareness and accountability among designers are undermining cultural equity. Designers must embrace more cross-cultural research and intercultural dialogue within their work. Doing so can mitigate negative and unintended design outcomes, and even facilitate a more just society.

CONTEXT
The need for integrating cultural research into design processes becomes even more apparent when considering the demographics of the discipline. Despite rhetoric praising diversity’s positive role in creativity and problem-solving, the profession lacks cultural diversity. According to the 2017 Design Census, 73 percent of designers surveyed identified as White, nine as Hispanic, eight percent as Asian, three percent as Black/African American, and one percent as American Indian/Alaska Native(AIGA 2018). While indicative of improvement, it is not representative of consumers, even in the United States. According to the US Bureau of
Labor Statistics, the US population is 61 percent white, 18 percent Hispanic, six percent Asian, 13 percent black, and one percent American Indian/Alaska Native (United States Census 2017). And our work reaches the nation’s entire population,

CULTURALLY INCLUSIVE DESIGN RESEARCH

As empowered creative professionals, designers must consider their broad influence on cultural equity. Specifically, designers must consider cultural dynamics and evaluate the impact—whether intended or not—of design outcomes on cultural groups and systems. Practitioners must consider cultural representation, authenticity, authorship, and exchange when analyzing design narratives. And educators must teach these skills. The complexity of the socio-cultural issues demands cultural research that is inclusive in both process and outcome. In light of design demographics, it also demands concerted effort.

This session addresses the role of design research within cultural contexts. It will focus on the integration of cultural research into the design process, rather than human resource practices. Key questions to be addressed include:

- How can design professionals and educators promote cross-cultural research and intercultural dialogue within design contexts?
- What common obstacles do designers face when doing so?
- What strategies, tactics, and resources have designers found useful to facilitate these activities?

CONCLUSION

By the end of the session, participants will have developed the foundation with which to guide their cross-cultural research and intercultural dialogue efforts. These benefits include:

- Increased awareness and understanding of cultural issues pertaining to design
- A portfolio of resources to facilitate cross-cultural research and intercultural dialogue

REFERENCES


Strategy and Objectives

GOAL

This session will address the role of design research in cultural contexts. Key questions to be addressed include:

- How can design professionals and educators promote cross-cultural research and intercultural dialogue within their work?
- What common obstacles do designers face in promoting cross-cultural research and intercultural dialogue?
- What strategies, tactics, and resources have you found useful in facilitating these activities?

EXPECTED OUTCOMES

Expected outcomes include the following:

- Increased awareness of cultural issues pertaining to design
- Identification of resources useful in facilitating cross-cultural research and intercultural dialogue.
- Support for those engaged in these activities.

Furthermore, a shared list of contacts and recommended resources, developed with consent of participants

STRATEGY

The following conference themes will be addressed during introductory presentation in order to guide discussion: doing design research, supporting design research, and teaching design research.

While some participants may be hesitant to discuss topics pertaining to diversity within an intercultural context, all perspectives are welcome. The facilitator will draw from her experience as both a professor and a diversity, equity, and
inclusion trainer to facilitate to encourage an inclusive and productive dialogue grounded in critical inquiry. Time will be actively monitored.

In the event that the participant pool is large, small group discussions will facilitate substantive dialogue among the larger group. The facilitator aims to be inclusive. Participants should inform her of any special needs.

» Timeline & Guidelines
Saturday 2:00–2:50 PM

2:00 Welcome/overview
Facilitator introduces herself, describes workshop, reviews agenda, and distributes forms to collect contact information from interested parties. (<5 min)

2:05 Introductory Presentation
Facilitator shares her interest in cultural research and describes a project in which she led 300 industrial design students in developing design concepts for Ganondagan State Historic Center. Ganondagan is her work in and describe her work. Focus will be on a project with Ganondagan. (~5 min)

2:10 Individual introductions
Participants will announce their name, their role (e.g., student, faculty, practitioner), and a one sentence description describing their interest in the session. (5 min)

2:15 Facilitated discussion. (25 min)

2:40 Recap/next steps. (5 min)

2:45 Dismissal/collection of contact information. Leaving room for last minute exchanges. (5 min)

2:50 Create quick flip-chart recaps (10 min)

The colliding discourse of “cutting-edge” design practice and “serious” design research

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Keywords
Cutting-Edge, Design Practice, Design Research, Future, Innovation

Practice informing research and research informing practice is a virtuous cycle in any field. Ideally, researchers generate knowledge that industry practitioners apply and then those practitioners identify needs or develop innovations that inform researchers’ ongoing agendas. In design, we are far from achieving this goal. Designers’ lingering pursuit for ‘cutting-edge’ products is at odds with academic needs to produce ‘serious’ research, and this tension inevitably affects design education. ‘Serious’ academic design research refers to rigorous approaches that follow systematic frameworks or methods, which aim to generate design knowledge that designers can use to inform evidence-based practice. It is the opposite of unsystematic research done in practice to make specific decisions; typically, these results are not transferable to other design problems, but they are still useful to make informed decisions. ‘Cutting-edge’ design practices refer to approaches that value novelty based primarily on the exploration of aesthetics, trends, and visual surprise, which leave other human needs such as understanding and usability in a lesser priority. The increasing disconnect between ‘cutting-edge’ design practice and ‘serious’ academic research poses problems for the future of design research and education. We suggest that a major cultural shift is necessary for design academia to both lead cutting-edge approaches and provide useful and visible knowledge.

In this conversation, we invite discussion on this topic in the context of three points: the value of cutting-edge trends in preparing future designers; the lack of exchange between
academia and industry; and cultural shifts necessary to sustain the field.

First, the market, corporations, and designers value cutting-edge products which function as pledges for the future; consumers make purchasing decisions based on the appeal of external characteristics. Academic knowledge is cumulative and is expected to have rigorous critical, theoretical, and historical support. As specific opportunities arise, however, industry develops design methods and trends ahead of design programs. How might this affect the preparedness of new professional designers to do truly innovative work?

Second, there is a perceived disconnect between practicing designers and academic design researchers in terms of dissemination. Industry magazines (e.g., Communication Arts) and professional conferences (e.g., How Design Live) appeal to designers through a focus on career-building as well as “taste-making and trend-spotting” 2. Scholarly journals (e.g., International Journal of Design) and research conferences (e.g., Design Research Society) are academic currency and established venues for ‘serious’ peer-reviewed research. The former is more visible to the public while the latter tends to be exclusive and hidden within institutions. If academia and industry speak to themselves instead of each other, how might we publish or present academic design research to influence practitioner audiences?

Last, when compared with other academic disciplines, the design field is in its youth. In this context, the existing body of design knowledge is insufficient, and the quality and nature of education in design research varies greatly among institutions. This implies significant challenges for design research education not only at a PhD and MFA levels but also at MA and undergraduate levels. This is not only a problem of knowledge generation but also a problem of translation from basic knowledge to embedding this knowledge in designers’ everyday work. Considering the institutional expectations of academia (regarding tenure, promotion, curricula, etc.), what are tangible ways to catalyze a shift in how we approach research and teaching?

ENDNOTES

» Strategy and Objectives

SESSION GOAL

• A synthesis of our colleagues’ perspectives on the opportunities and barriers surrounding design practice and research tensions.
• A set of tangible steps toward a more relevant research culture relationship between design practice and academic research.
• 3 questions for discussion:
  » How might academic researchers facilitate truly innovative research ahead of design practitioners?
  » What are some practical ways to facilitate dissemination of academic research to influence design practitioners?
  » Across various types of design education institutions, in what key ways might we approach academic research and teaching to impact design practice?

EXPECTED OUTCOMES

• We intend to perform a rhetorical analysis of the conversation for publication purposes.

STRATEGY

Prior to the session, we will send a brief series of questions – via email or possibly as a Google Form – for participants to answer (or consider) prior to the discussion. This will provide a start for the conversation itself, and use our time in a strategic, focused way. This also allows for all participants to engage prior to the conference. During the session, participants will be separated into three smaller groups; each group will address one of the aforementioned questions.
Learning from without, redefining design

SUCHARITA BENIWAL
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Keywords
Maker-community, Practice-based knowledge, Culturally located design, Crafts-making, Collaborative design

DEFINE DESIGN RESEARCH
With rising complexity of the issues faced by the world, practitioners are acknowledging design and ways of designing that exists outside the formal formats of design. Design in the real world is often independent of formally trained designers. In Indian craft context the makers of objects of everyday use are not called designers neither are the objects called designed objects. These craftsperson are at best acknowledged as makers of designed objects, as the skillful hands that translate the visionary ideations of celebrated designers (Fabric of India, exhibition and catalogue at V&A, all designs showcased by designers were created by craftsperson, the names of the craftsperson remain unknown). The issue here is not just about appropriation of skills of making, but negation of the repository of knowledge that the act of making and the makers themselves through generations of engagement with the technique, material and context bring.

CULTURALLY LOCATED MAKING
Design action in the field of textile and fashion design, in India, has been pseudo-collaborative with making-crafts in the sense that the designer brings in the context of the current market and through a theoretical understanding of the craft technique and material use, while using skilled craftsperson to actualise her idea. Often through dictates of the market, non-local new materials and culturally alien design language is introduced by the thinking-designer. While newness was a factor a craftsperson had to incorporate since time immemorial to keep their craft relevant to the patrons and markets, this was a slow action traditionally taken by
them. Simultaneously, there has been a rise of craftsperson-training-design-schools that are meant to educate the craftsperson in design vocabulary to make them independent of the designer. Yet, much like the formally college educated designer, these artist-designer-craftsperson create one off pieces and break away from their traditional context introducing into their craft elements and materials that the market dictates and will appreciate. Simultaneously, there is a steady decline in the numbers of traditional maker-communities whose identities (caste hierarchy, symbiotic relationship with another community) and contexts (environment, material availability,) were embedded in their making/craft practice either through material or technique, like cotton-weavers, potters, leather workers, dyers, even darners. A reaction to the decline of makers is the rise of skill-upgradation and livelihood projects, supported by governments, corporate social responsibility, and non-government organisations where new communities are taught making-skills to translate ideas, again heralded by designers; these new maker communities are created as skilled-labour to translate the ideas of the design community, independent of cultural context.

The complexity and multiplicity of issues at work here require design research to engage more proactively in these contexts, while working to create new formats of research to understand where these futures are headed and how to engage more meaningfully. This rapid erosion of traditional formats of knowledge of making, cultural repository of makers and contextual linkages that the traditional makers carried is an issue of concern, that designers of today need to acknowledge and work with to keep alive cultural heritages, while valuing the knowing that comes from being embedded in making, making within a context.

Design research needs to expand to define and develop a more democratic format of co-design to work with communities not as empowered as the educated designer. Other disciplines like ecology, sociology and anthropology (Berkes 1998, Ingold 2013, Lansing 2006, Scott 1998, Sennett 2008) have recognised these issues and have tried formulating ways to work collaboratively with other practice-based knowledge systems and living contexts. A faint undercurrent in also the politics of the hierarchy of handwork versus thinking, which has been questioned in disciplines like architecture (Pallasmaa 2009) and anthropology (Ingold 2013).

CONVERSATIONS

Thus, the questions that designers, design academics and students of design need to ask to define and elaborate the domain of democratic design in culturally located maker spaces are a few.

What are the new formats of design research and co-design for engaging with maker communities that are culturally and contextually located?

How are designers of tomorrow going to acknowledge and bring in makers, doers, as well as less heard-seen peripheral practitioners into a democratic process of design?

What kind of knowledge do culturally located makers-practitioners other than designers, architects, artists, sculptors possess? These knowledges are not just the maker skills.

How these knowledge’s are relevant to designers?

What about these knowledge’s are coded in culture?

How can design collaborate in more democratic terms with community and culture specific makers while respecting and drawing from their methodologies?

Design practitioners and critics agree that there is experiential knowledge that making brings. Design and designer practitioners can understand this knowledge through bodily engagement with making and material (Niedderer 2013). Yet, with traditional maker communities this knowledge is embedded in the cultural context, it brings with it aspects can only be understood contextually and by the community. This research further wants to develop ways of design which allow the designer to work with traditional makers, yet not create hierarchies of knowledge between the two paradigms of design action. These aspects become the central premise of this current design research, for understanding these knowledges will allow design another way of organising the world and engaging with it.
Decipher Session Strategy and Objectives

SESSION GOAL

- Initiate an awareness on more democratic ways of designing.
- Initiate an awareness and respect for culturally located makers (especially craftpersons in Asia as well as tribes in Asia, Africa, Americas and Australia) and their knowledges.
- Explore possibilities and methods for more democratic ways of design.
- The session will add to knowledge of ways of democratic designing that can be explored. Thus, redefine design into new form. It also seeks to create an atmosphere of respect for other knowledges of culturally located makers and thus maybe redefine the term designer and non-designer.
- Some questions in the conversation, will be:
  » What could be a democratic process of design?
  » What could be co-design with makers on equal terms?
  » How can experiential knowledge be understood and respected?
  » How to begin a design process as equals?

EXPECTED OUTCOMES

- Respect for other forms of knowledges that non-designers bring.
- New dialogues on how designers approach craftsmanship.
- New approaches to work with contextually located makers/craftsperson.
- If the conversations around the group conclude that there is need of more inclusive processes in design, and one needs to find the same.
- If dialogues and provocations persist into work of designers working with culturally located makers.
- If a small group of participants form a thinking-group and continue the dialogue beyond the conversation in the conference.

STRATEGY

- A larger group dialogue to initiate and establish with the participants a need for equitable design in the area of...
contextually located makers.

- Small group conversations initiated with provocations in form of question cards and visual cues, each participants will have to talk a sentence or two on each of the cues and another participant in each group will be taking notes.
- This conversation could provide new leads to defining design and doing co-design.
- The conversation will raise and try to address questions on democracy in design, this will help define the design research in this area.
- The conversation hope to initiate some action on doing equitable design and this could expand the domain of doing design research.
- Since it is a conversation I think inclusivity will not be a problem. All kinds of participants practitioners, academics, students, as well experienced and/or novices from the domain of design will add to enrich the conversation. I will only try to ensure that the each group has a mix of the various participants for different voice to reach each other.
- The conversation has 45 minutes and the participants will be new to one another and there maybe other contingencies during a conference, I would be happy if the conversation can initiate engagement beyond the conference. But at the moment of the conversation if further time/participant interactions feels/seems/look non-productive I will either get everyone to respond to the cues as individuals. And then collate the responses with a volunteer, but this would be definitely be less impactful than smaller in group discussions within participants.

» Timeline & Guidelines

SESSION START

Pre-session:
Break the number of participants into 5 groups so configure the chairs and tables accordingly
On each table, put one A1 sheet, markers and post-its, and printed visual cues (A3) and a blank A3
Brief affinity participants in each group/volunteer to take points from the conversation

1500
Ask participant to break into groups (such that total groups is 5)
Open the session and introduce my own work, where I come from, (3 slides) the contexts for this conversation
A short exercise for each participant to tell her group members about herself and why choose this conversation and if it is relevant to her work(write on post-its)
Theoretical and practice frameworks where co-design and design in the real world is located (2 slides)

1510
Trigger models A3 (different for each group) how designer act in the domain of culturally located makers
Visuals of other actions in the domain ( works of Khalid, Saddie, Akama, Dori)
Discussion write all reactions on post-its
Brief affinity participants in each group/volunteer to take points from the conversation

1520
Continue the discussion and give the printed trigger questions cards
All write reactions on Post-its/ Affinity Participant on big A1

1530
New model for action on blank sheet
Take 5 salient points from each group and write on whiteboard for all to see

1540-1550
Each group puts up their model sheet and A1 sheet and walk through to see

SESSION END

(Last 10–15 minutes before start of next session: create quick flip-chart recaps)
Creativity in Design: Relationships among creativity components and comparison of idea generation outcomes between crowdsourcing and individual creativity

Understanding the Horticultural Community First: Generative Research

Experiential Learning Spaces to Enhance Typographic Communication

MealSpace: A New Way To Eat And Cook Nutritious Meals

Visualization of Chinese-Mongolians’ Encounters with Identity Dilemma

The Semiotics of Pain: Visual Pain Assessment

Persian Typeface Design: the Process and Challenges

Lake Menomin Project: Exploring an Outdoor Museum Piece Using Design Research Techniques
Creativity in Design: Relationships among creativity components and comparison of idea generation outcomes between crowdsourcing and individual creativity

Keywords: Creativity, Persistence, Flexibility, Novelty, Usefulness, Idea generation, Crowdsourcing creativity

INTRODUCTION

Idea generation is one of the creative design processes that people can produce for various solutions based on a given problem. As a result, not only research on design process but also creativity study, idea generation is increasingly important. However, many previous studies were performed in laboratory settings. Therefore, we examined the outcome of the idea generation task in a more realistic context.

The research we present here is to show whether the quality of the ideas produced in the idea generation is more creative as time goes on and more flexible in generating the diverse idea categories. In addition, although the previous creativity theory argues that creative ideas are both novel and useful at the same time, less is known about which one of novelty and usefulness is more related to creativity, how they relate to each other, and how the criterion of novelty and usefulness can predict creativity evaluation. Finally, we will identify the differences between the ideas produced by individuals in their idea generation process and the ideas produced by feedback through the sharing of multiple ideas in an open design platform.

STUDY 1: RELATIONSHIPS AMONG CREATIVITY COMPONENTS: PERSISTENCE, FLEXIBILITY, NOVELTY, AND USEFULNESS

What makes creativity? Creativity is defined as the generation of ideas, insights, or solutions that are novel and useful for a given situation or problem (Amabile, 1996; Amabile, Barsade, Mueller, & Staw, 2005; Lucas & Nordgren, 2015). Novelty refers to the ideas that only few people will come up with. They are thus unique or rare in the population (Runco & Charles, 1993). Usefulness means idea’s feasibility, effectiveness, or plausibility (Diedrich, Benedek, Jauk, & Neubauer, 2015; Long, 2014). The study 1 examines the relationships among creativity components and which one can better predict creativity evaluations. Based on the traditional creativity theory (DPCM; Dual Pathway to Creativity Model; Nijstad, De Dreu, Rietzschel, & Baas, 2010), creative outcomes are a function of cognitive flexibility and cognitive persistence. Flexibility means the use of broad and inclusive cognitive categories, and relatively frequent switching among cognitive categories (De Dreu, Nijstad, Baas, Wolsink, & Roskes, 2012), which are related to the divergent thinking process. Persistence means the act of continuing to invest effort toward a task or goal, is considered essential for creative performance (Lucas & Nordgren, 2015), which are related to convergent thinking process. Thus, this research investigates the effectiveness of the roles of cognitive flexibility and persistence for creativity evolution.

We analyzed the idea quality using the ideas submitted by the students through the idea generation task given in the summer class. Study 1-A examined whether the quality of ideas evolved more creative over time, and Study 1-B investigated whether the categories in which the ideas belonged were produced more (flexibility) or not while the idea persisting in the subsequent idea generation task. Additionally, Study 1-C examined the relationship between creativity, novelty, and usefulness and analyzed how novel and useful ideas can predict creative ideas.

Twenty students from University of Michigan were asked to perform two idea generation tasks through receiving summer class credits. Students were given a week to complete a task and were asked to produce ten ideas per task. We analyzed the four hundred ideas of twenty students produced by the two idea generation tasks which were different time. The big theme of the idea generation task was “How could we dramatically reduce waste by transforming our relationship with food,” and students were asked to generate creative ideas especially related to “food habit” through the two idea generation tasks. Then students
evaluated the quality of their twenty ideas they produced through the two idea generation tasks in terms of creativity, novelty, and usefulness (creativity of ideas quality rank ratings: 20 = the most creative idea; 1 = the least creative idea).

In terms of the Study 1-A persistence test, we analyzed the frequency of ideas that were either creatively evaluated or not, among the ideas generated by the students in the first task and the second task with time differences. The results showed that the most creative ideas are produced more in Task 2, while the less creative ones are more in Task 1. Thus, there is a trend that the more creative ideas have more persistent (later) ideas than immediately generated ideas. To support the above results, we analyzed whether the ideas produced during persisting were more creative over time than the ideas originally produced. The order of production of the ideas has a positive effect on the production of creative ideas as a result of the regression analysis that the order of production of the 400 ideas is an independent variable and the creativity score of each idea is the dependent variable (β = .124, SE = .050, p = .013). In other words, the later order of idea production, the more ideas were evaluated as more creative.

In the Study 1-B flexibility test, we expected that while participants were persisting in Task 2, they would produce more new ideas that were not in previous Task 1, and that the ideas would be evaluated creatively. The results showed that participants produced an average of 1.81 new categories in the Task 2 and produced an average of 3 new ideas that did not overlap at all with Task 1. On average, two of these newly produced ideas were evaluated as creative ideas. In other words, individuals can cognitively produce more flexible and new ideas while persisting. In other words, this result suggests that the idea quality increases over time.

In the Study 1-C Correlations between creativity, novelty, and usefulness test, we analyzed the Spearman correlation to see how creative ideas are related to ideas that are evaluated as novel and useful ideas. The results show that creativity evaluation shows novelty, usefulness and strongly positive correlations. When we look at the coefficient of creativity, creativity appears to be more related to novelty (r = .427) than usefulness (r = .133). However, unlike what we expected, there is no significant correlation between novelty and usefulness (p = .344).

**STUDY 2: COMPARING IDEA GENERATION OUTCOMES BETWEEN CROWDSOURCING AND INDIVIDUAL CREATIVITY**

The study 2 starts from the different research question which are ‘how different creative outcomes when comparing crowdsourcing and individual creativity?’ It compares the idea generation outcomes between crowdsourcing OpenIDEO data and individual students’ data. The OpenIDEO is a global design open platform that is an online community where
people are offered a better solution by suggesting their ideas on a common challenge, giving feedback to other people’s ideas over a given period of time. The purpose of the Study 2 is to identify the differences in the creativity of individual ideas and crowdsourcing ideas, especially in terms of ‘flexibility’ of creativity.

Our crowdsourcing data are obtained from OpenIDEO (www.openideo.com), an open design platform community. We analyzed the ideas proposed in the ‘food waste’ challenge among the various challenges. The Food Waste Challenge was launched on the online platform from June to September 2016 with the theme ‘How might we dramatically reduce food waste by transforming our relationship with food?’ More than 20,000 people from more than 100 different nationalities participated in the challenge over three months. We analyzed a total of 450 ideas proposed by participants in the idea generation phrase. First, we collected all 450 ideas and reviewed them in previously defined five categories (‘Waste means business,’ ‘Food habits,’ ‘Thinking Locally to Scale Globally,’ ‘Better together.’ ‘Unwashed campaign’). We chose the ‘Food habits’ category among the four categories and subdivided the categories according to the food waste cycle in this 121 ideas. Unlike OpenIDEO, students’ idea generation task was individually and independently conducted rather than sharing ideas and feedback with others. Students were asked to submit a total of 20 food habit-related ideas from the food waste. In order to select categories of ideas, we subdivided the various ideas into 12 stages in the food waste cycle. The subdivided categories are: (1) Producer, (2) Packaging, (3) Store, (4) Shopping list, (5) Cart, (6) Home storage (Pantry / Refrigerator), (7) Meal planning, (8) Meal preparation, (9) Plate, (10) Leftovers, (11) Disposal, (12) Other. The 121 ideas of the OpenIDEO’s were classified based on the above 12 stages, and students were required to classify their ideas based on the above 12 stages.

In order to see how distributed ideas by categories, we analyzed the student’s ideas and ideas of OpenIDEO and calculated the frequency of each subcategory and how many percent of the ideas they took. Unlike what we expected, the OpenIDEO’s ideas were concentrated only in Home storage (28%) and Meal planning (21%), while students’ ideas were spread across the four categories (Store: 13%; Meal Planning: 13%; Leftover: 13%; Disposal: 19%). These results were slightly different from the general expectations that flexibility of ideas is considered to be more diverse in an open design platform, where opinions and feedback from various people are commonly shared. These results suggest that the flexibility of ideas suggests the importance of individuals in producing ideas in an independent form.

In addition to the previous result, we also looked at where the best ideas are located in categories. Does the best idea come from a category where people produce many ideas? Or does the best idea come from an idea category that people do not produce much? In order to answer the above questions, we analyzed the categories of the idea selected as the top idea among the ideas provided on the OpenIDEO website and the idea that was voted as the best idea among the ideas produced by the students. First, the top ideas of OpenIDEO were evaluated by the collaborators, challenge sponsors, and advisory panels of OpenIDEO and the criteria for evaluation are as follows: Ideas for reducing food waste were evaluated based on how innovative they are, whether they are human-centered, can be extended to local community levels, and whether they are well understood and reflected in the relationship with the food system. Food waste challenge 12 out of 450 ideas were selected as the top idea, and one out of 121 ideas that corresponded to our “Food habit” topic was selected as top idea. The top idea “Eat the old one first” was included in the ‘Home storage (Pantry / Refrigerator)’ category, interestingly, which is the category with the greatest number of ideas (28%). In other words, the top idea among ideas generated from idea generation through crowdsourcing suggests that best ideas can come from ideas that people can think of most and actually produce the most ideas.

Next, the best ideas of the students’ ideas were selected by the students’ votes. Twenty students were asked to submit one of their best ideas out of the ideas they produced. Of the twenty ideas collected, individuals were asked to choose the three best ideas per person, and the total votes were 60 votes. The idea that won the highest number of votes among all 60 votes was “Will’s Double lid jar” with 15 votes, and the category to which this idea belonged was ‘Packaging.’ The second idea was the 14 votes “Yonathan’s Elimination
of Food,” and the category to which this idea belonged was ‘Meal Planning.’ In previous study 1-A, students’ ideas were evenly distributed across four categories (Store: 13%; Meal Planning: 13%; Leftover: 13%; Disposal: 19%). Considering that the two ideas selected as best ideas for students have the categories of packaging and meals planning, the best ideas selected by students are not only evenly distributed in categories with many ideas, but in categories that others do not think much about. Of course, there is a possibility that the criteria for students’ evaluation of the best ideas may be different from those evaluated by that of OpenIDEO. However, we can identify the clues as to where the best ideas of individual creativity and crowdsourcing creativity come from.

DISCUSSION AND CONCLUSION
Considering the results of the Study 1, novelty has a bigger contribution to ideas judged as more creative than does usefulness even in longer term design projects. Other studies support this finding in short tests of creativity. We suggest design practitioners to give more time to persist. People easily underestimate the value of persistence for their creative performance. However, now we know how important the persistence is for enhancing creativity.

Also, based on the results of the Study 2, we encourage designers to generate own ideas first, then share ideas later. Unexpectedly, the research results showed that crowdsourcing ideas does not necessarily produce the most different design concepts. Sharing ideas in early idea generation stage may influence other designers, leading to group fixation on a smaller set of design categories. When students worked alone on their ideas, they generate more different kinds of ideas, presumably benefitting later stages of design. Therefore, we suggest generating one’s own ideas first, then exchange ideas with others.

REFERENCES

Understanding the Horticultural Community First: Generative Research

**Keywords**
Horticulture, Field Observation, Generative Research, Design to Value, Design for Communities

**DESIGN TO VALUE**
Shallow understanding and insufficient access to relevant information are common conditions in design that lead to poor solutions. The purpose of this research is to understand the horticultural community and those within it in order to gain insights from their behavior that inform better design outcomes. What are their wants, needs, and goals? How can this information help the designer find previously unidentified problems? The research began with concept mapping, interviews, field observation, and personas which then informed an infographic poster (Figure A). A matrix (Figure B) was then created in order to identify problems and solutions. The most relevant and useful problem was chosen to become a physical design outcome, the same process was then replicated in order to create a digital design outcome (Figure C).

In this situation, beginning with design research allows the designer to gain a deeper understanding of their community or “client” first in order to then find the deeper problems, rather than creating solutions to problems given to them by a client, of which the designer may only have a surface understanding of. The methods used throughout can be seen as a construction kit that can be replicated and remodeled, an open work to be repeated as needs change.

![Figure A: Infographic Poster Based Off of Primary and Secondary Research](image)
<table>
<thead>
<tr>
<th>FINDING</th>
<th>OPPORTUNITY</th>
<th>STRATEGY</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>People are not aware/underestimate the physical, mental, and therapeutic benefits of gardening and farming.</td>
<td>Educate/inform people about all the pros and benefits of farming and gardening.</td>
<td>Create an event where people can come out and learn simple gardening techniques that they can do at home, while simultaneously learning about all the benefits.</td>
<td>Create a poster to advertise the event, and create a takeaway informational piece.</td>
</tr>
<tr>
<td>People think organic, natural, and sustainable are all the same thing and do not know the differences.</td>
<td>Educate people about the differences between organic, natural, and sustainable.</td>
<td>Create an interactive activity that teaches people the differences between the different practices.</td>
<td>Design an interactive activity.</td>
</tr>
<tr>
<td>There is a misconception that there are no jobs in the field, or that the only job is “farmer”.</td>
<td>Educate people on the unlimited opportunities in the extremely diverse field of horticulture.</td>
<td>Make an event like a job fair to expose people to all the industries, companies, and job opportunities out there for horticulturists.</td>
<td>Create a poster to advertise the job fair/event. (Advertising campaign).</td>
</tr>
<tr>
<td>A small percentage of people grow their own food anymore, it is a skill that no one learns except for people in the field.</td>
<td>Teach people the techniques and knowledge necessary for growing your own food.</td>
<td>Make a tool kit that includes everything you would need to properly grow something in your home.</td>
<td>Create packaging for the tool kit.</td>
</tr>
<tr>
<td>There is a lot of food insecurity in neighborhoods with high poverty rates/low income places.</td>
<td>Establish ways to fight food insecurity</td>
<td>Create campaigns to raise awareness and get food donations to distribute to neighborhoods with high food insecurity.</td>
<td>Create a campaign to raise awareness and encourage donations</td>
</tr>
<tr>
<td>People are completely unaware of what they should be eating in a day or the negative consequences of unhealthy eating as well as the corruption of the food industry.</td>
<td>Teach proper nutrition and bring awareness to the corruption in the food industry</td>
<td>Create a movie night where there are food documentaries shown and healthy foods given.</td>
<td>Create infographics that show what you should eat in a day, nutrition facts about certain foods, healthy and unhealthy and event promotional materials</td>
</tr>
<tr>
<td>In the near future we are going to need to produce twice the amount of food that we currently do in order to meet human consumption needs.</td>
<td>Bring awareness to the issue</td>
<td>Create infographics to explain the implications of the issue</td>
<td>Design infographics</td>
</tr>
<tr>
<td>There is a lot of food waste and not enough efforts to control it.</td>
<td>Teaching harvest storage, preserve more waste less</td>
<td>Create a campaign that informs people on how to preserve more and waste less—conduct workshops</td>
<td>Campaign materials and workshop/teaching materials, brand a class?</td>
</tr>
<tr>
<td>People try to buy fruits and vegetables that look the best when looks don’t determine the quality of the fruit which contributes to waste.</td>
<td>Break down the misconception</td>
<td>Use art and design to change perceptions</td>
<td>Design a campaign to change perceptions</td>
</tr>
<tr>
<td>Post-harvesting problems have to keep produce in best shape as it has the best shelf life (use refrigerated trucks)</td>
<td>Sourcing your food locally</td>
<td>Create a farmers market or local store</td>
<td>Branding of a local co-op/farmers</td>
</tr>
</tbody>
</table>

Figure B: Problem Finding and Solving for a Physical Design Solution
<table>
<thead>
<tr>
<th>SOLUTION</th>
<th>DIGITAL</th>
<th>BENEFITS</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a poster to advertise the event, and create a takeaway informational piece.</td>
<td>Create a website to promote events as well as links to resources of where in the community individuals can attend different types of gardening (social)</td>
<td>Creates a one stop location to find several options around the community that offer social gardening as well as easily accessible event info - fosters more participation</td>
<td>Functions as a website with easily accessible information, as well as a calendar with easily understandable and visible community events</td>
</tr>
<tr>
<td>Design an interactive activity.</td>
<td>Create an educational app game that teaches the difference between organic, natural, and sustainable</td>
<td>Educational and fun way for people to learn the differences in an interactive manner</td>
<td>Would work as a trivia and interactive game app</td>
</tr>
<tr>
<td>Create a poster to advertise the job fair/event. (Advertising campaign).</td>
<td>Create a website that works as a search engine for all the jobs in the field</td>
<td>Puts a mass of information and job listings in one place and makes it easy to refine and find specific results</td>
<td>Functions as a search engine</td>
</tr>
<tr>
<td>Create packaging for the tool kit.</td>
<td>Create an app that guides you in choosing the optimum time to grow fruits and vegetables in your area by utilizing location based data &amp; information. App includes a garden planner by way of a virtual reality garden, a progress tracker to keep up with what you have planted by uploading pictures, has step by step instructions with text &amp; visuals on how to plant and maintain specific plants.</td>
<td>Makes it extremely easy to take your gardening plans in to action by guiding you with a virtual garden planner, progress tracker, and instructions. It is a one stop shop for all the resources that is in your hands.</td>
<td>Functions as an organizational &amp; planning app where virtual reality blends with physical and digital to create an easy and seamless way to learn how to begin &amp; maintain your own garden.</td>
</tr>
<tr>
<td>Creates a campaign to raise awareness and encourage donations</td>
<td>Create a website to help raise funds and collect donations for these communities</td>
<td>Creates a place to help increase the amount of money collected for these causes and place for food insecurity advocates to spread their message</td>
<td>Functions as a donation website</td>
</tr>
<tr>
<td>Create infographics that show what you should eat in a day, nutrition facts about certain foods- healthy and unhealthy and event promotional materials</td>
<td>Create infographics that show what you should eat in a day, nutrition facts about certain foods- healthy and unhealthy and event promotional materials</td>
<td>Create a website/app combo where you can learn about nutrition and what you should eat (on website) then go on app and keep track of your daily food intake</td>
<td>Website works as guide and recipe resources, that then works in combination and connection with app, app functions as a logger and tracker</td>
</tr>
<tr>
<td>Design infographics</td>
<td>Design infographics</td>
<td>Create a website that serves as an online campaign</td>
<td>Functions as a sharable social media campaign</td>
</tr>
<tr>
<td>Campaign materials and workshop/teaching materials. Brand a class?</td>
<td>Campaign materials and workshop/teaching materials. Brand a class?</td>
<td>Create an app that has virtual classes/workshops that teach about food waste and storage and preservation techniques</td>
<td>Functions as a subscription based app, where you sign up for different workshops and classes that you attend virtually</td>
</tr>
<tr>
<td>Design a campaign to change perceptions</td>
<td>Design a campaign to change perceptions</td>
<td>Create a website that serves as a campaign for educating people on the misconception</td>
<td>Sharable social media campaign</td>
</tr>
<tr>
<td>Branding of a local co-op/farmers market</td>
<td>Branding of a local co-op/farmers market</td>
<td>Create website to house the local co-op brand with an accompanying mobile app</td>
<td>Serves as home website for the market/co-op that houses all their info and online shopping</td>
</tr>
</tbody>
</table>

Figure C: Problem Finding and Solving for a Digital Design Solution
Experiential Learning Spaces to Enhance Typographic Communication

Keywords
Experiential Design, Situated Cognition, Typographic Communication, Design Pedagogy

ABSTRACT
Contemporary graphic design practice is shifting from visual design implementations to a design of experiences within complex systems [Davis, 13]. The Designer of 2025 Symposia [AIGA Conference, 2017] compiled a list of trends for design educators for the upcoming 7 years. These trends have mentioned the need to create new sense-making platforms that will allow designers of the future to bridge the gap between the physical and the digital realms. This is necessary for users today, who are not passive observers of design but are rather engaged in the process of design through interactions within mediums. As a designer, my practice has evolved from designing print-based work to designing experiences that allow the user to understand the information being communicated in an embodied, immersive manner. I believe this can be achieved through creating experiences that communicate information through all sensory channels, and the use of multiple mediums.

I define this approach to design as experiential design. I feel this kind of experiential design will allow future designers to effectively communicate information to the users.

Based on the above-mentioned trends and changes in the graphic design practice, I feel that experiential design is an emerging context for graphic design pedagogy. It is also an efficient method to create valuable emotional experiences.

The aim of my thesis was to create experiential learning spaces in a typography design classroom to enhance student work. This poster presentation is a compilation of my research of theories and explorations of strategies that helped me bring an experiential teaching approach to the classroom. As graphic designers, we employ typography as a visual tool. However, from a user’s perspective, typography is a means of communication that affects their day to day life in many ways including: instruction, conversation, learning, understanding and a means to generate creative and critical thought. Type impacts the culture and societal structures we live in, it is essential for graphic designers to understand this broad impact of communicating with typography. To help my students understand this, I created a class structure around the concept of a ‘Narrative’, building on theories of meaning-making through semiotics, the contribution of materiality to add value and meaning to a designed object, and the impact of a positive emotional aspect on the success of a designed experience.

This poster presentation is a compilation of the theories and principles I used to help my students design an experience with type. Through this study I found that an experiential approach to teaching allows the students to learn core concepts in a class in an interactive, immersive manner. Breaking down discussions through experiences and hands-on activities allows students to be actively engaged in the learning process. Experiential learning helps build a positive emotional context through the embodied learning. This context helps nourish student creativity, allowing them to explore varied methods of making through the project prompts.

PROPOSED THEORY AND TEACHING PARAMETERS

Figure 1. Experiential Meaning Making Theory, building on Nathan Shedroff’s Information Interaction Design: A Unified Field Theory of Design[3].
STUDENT WORK SAMPLES – NARRATIVE/TYPE AS AN EXPERIENCE

Figure 2. Type as a Game by Evelyn Li, Tiffany Zhang, Rachel Chen

Figure 3. Final Wars Type Crawl by Lucas Simes, Sam Altheus, Edward O’Malley

Figure 4. Self Portrait - Understanding Materials by Puja Chug

Figure 5. Real Myths – Hope by Daniel Corry, Madison Tompkins, Melissa Andrikos & Armando Sanchez-Monsivais
MealSpace: A New Way To Eat And Cook Nutritious Meals

Keywords
Meal-planning, students, health, nutrition, diet, self-care, mental health.

ABSTRACT
MealSpace is a solution that engages the student community that is new to a university campus by providing a physical space for students to cook together to encourage healthy eating. This space provides ingredients for tailored recipes, along with step-by-step guidance for preparing the meal. Drawing inspiration from makerspaces across the nation, MealSpace is conceptualized from studying student habits, responses, and working with the University of Michigan Health Services.

Research was done with students regarding the transition to a college environment from high school or a different country, since the drastic change of setting can push students to not prioritize healthy eating. Using various methods such as surveys, contextual inquiry, and diary studies, MealSpace was created. The technical intervention focuses on a website for registration of cooking sessions and a tablet interface for recipes and guidance. The main focus of MealSpace resides in engaging students to create a meal with each other.

INTRODUCTION
Students transitioning to a college environment from high schools or another country often have a hard time adjusting to the new environment and end up neglecting their body’s nutritional needs. Research has shown that college freshman gain more weight than the general population, ranging from about 1.5 to 4.5 kilograms weight gain in their first semester of college. In an interview with a dietitian nutritionist, Julie Stocks, at the University of Michigan Health Service Nutrition Clinic, we found that about 30 percent of college students experience eating disorders and many other college students struggle during the transition of moving out of residence halls and a buffet-style meal plans. This finding was consistent with another...
research on eating habits among college students. [personal communication, December 8, 2017.] Revealed to us that college students often are concerned about nutrition but are tempted by convenience and the large amount of options to choose from at many buffet-style dining halls during their first year of college.

Family cultures and other pre-established dietary habits also shape students’ decisions of selecting nutritious meals in college. As pointed out by Stocks, a home-cooked meal often contains more nutritional values when compared to food items made at restaurant. Therefore, to motivate students to start eating more balanced and nutritious meals, it is important to begin the process intrinsically, encouraging more cooking and healthy eating rather than dining at restaurants.

Our goal during this project was to design a research-based intervention for the student community that aids them to transitioning into preparing their own meals, while addressing issues of time management, motivation, and nutrition.

PROCESS OVERVIEW

Our process consisted of first determining a community to engage to which access was available for research. After brainstorming and initial user interviews, it was determined that there was a need for addressing the issue of emphasizing healthy eating in college campuses. From quick in-person survey results, we devised a priority matrix to understand what factors the target audience valued most when it came to meals. The resulting priority matrix and the corresponding responses are shown in Figure 2.

With successful understanding and identification of user needs, we began conducting user research. We discovered that students were concerned about the nutrition of their meals currently, but were not taking steps to address it. Upon learning this, our research question became focused on why students were not focusing on healthy eating and how the intervention could encourage them to focus on it more.

Overall, we followed a “convergent-divergent” model from this point forward, first conducting research to converge on an idea or solution, than testing it and diverging into a list of possibilities. This model was used for iteration throughout the design process.

USER RESEARCH METHODS

To assess our users’ needs, our research approach consisted of four different stages: [1] initial assessment survey, [2] paper survey, [3] user interviews and diary study, and [4] solution assessment. Throughout this process, we received feedback from the CHI Milestone committee at our university on the validity and scope of our methods. All responses were voluntary and anonymous and no compensation was offered.

### Figure 2: The matrix revealed that users prioritize high nutrition most, with cost also being an immediate concern.

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Most Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Nutrition</td>
<td>9</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Low Cost</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Effective Meal Planning</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Reasonable Location For Grocery</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Recipes For Meal</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Security Of Sensitive Information</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Increasing Motivation To Cook</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

INITIAL ASSESSMENT SURVEY

The initial surveys were sent digitally to students at the University of Michigan, including both international and domestic students and we received 35 responses in total. We collected information regarding their current grocery shopping and dining habits, as well as their opinions on nutritional values of their meals. The survey took approximately five minutes to complete.

PAPER SURVEY

We recruited participants for the paper surveys in person. All 21 participants were graduate students at the University of Michigan. The survey included two short answer questions regarding their current usage of nutritional values of their everyday meals, as well as one question on ranking seven factors of interest when it comes to eating and cooking; such factors included Responses were coded to assess factors that students ranked from most to least important for eating and cooking for themselves.
USER INTERVIEWS AND DIARY STUDIES

We conducted two user interviews on their current grocery shopping and grocery habits. Both were females and in their early twenties. We requested consent and received permission to record the interviews for analysis purposes. Both interviews lasted approximately 30 minutes in length and were conducted by two interviewers with one interviewee.

SOLUTION ASSESSMENT

The solution assessment was done in two formats: in-person and digital surveys. We assessed the effectiveness and user acceptance of our proposed survey by asking for feedback, additional experiences, and opinions regarding the needs we attempt to address through an online survey. Participants in this stage of research included both undergraduate and graduate students at University of Michigan.

RESULTS AND DESIGN ITERATIONS

Our initial assessment found that 94 percent of our participants were concerned about the nutritional values of food that they consumed, but 85 percent were not actively addressing the concern. From both paper surveys and user interviews, it was revealed that nutrition, convenience, cost, and time were the main issues when meal planning. The findings led us to believe that a free, “one-stop” mobile application that allows slow progression into meal planning and nutritious meal preparation could be a solution. One of the interviewees described, “I considered InstaCart, which is a subscription service for groceries, but I just didn’t want to have to pay for a subscription model.”

During the sketching phase, we thought of integrating features that are currently concentrated across disparate applications or platforms such as HelloFresh or Instacart. The application would provide suggested recipes and pre-selected grocery packages based on these recipes for easy, quick pickup.

However, Dr. Michael Niebling, a professor at the School of Information, suggested that the unification of this functionality of our initial solution may be useful, but it was not addressing the intrinsic motivations of students or why students were not using existing applications or focusing on their health.

To truly understand the perspective of students, we conducted diary studies and recorded the daily eating habits of students. We wanted to capture the students’ expectations and compare it to the outcomes. This divide would be able to show us where students could use a technical intervention, if it all. The diary studies revealed the general feeling after eating an unhealthy meal for the participants was often discontentment. However, when eating with a friend, the mood was consistently reported to be better regardless of nutritional content. This is when we realized we had missing a key component of the solution: socializing. Students did not feel motivated to eat healthy since it does not fit into their existing routines and is not enjoyable. Moreover, without parents to monitor students in a university setting, there is less accountability in eating healthy. Thus, we found empowering students to overcome the various barriers of ingredients, planning, and cooking with a friend is what would motivate them to focus more on healthy eating.

To learn more about student habits, we conducted an interview with University Health Services nutritionist, Julie Stocks. Julie revealed the current university standard of “plan, cook, shop, eat” and explained how students face difficulties in the first three steps, often stopping somewhere within the pipeline. From this interview, we realized that our solution must eliminate the need for students to plan and shop for their own ingredients. Rather, a slow transition or awareness for healthy eating can be brought about by students simply cooking. Empowering them to take this first step with a friend is what could build this initial interest and remove the barriers to start. Finally, drawing from the idea of engineering makerspaces, where all tools to create are included in one space to foster ideation and innovation, we came up with the idea of MealSpace. Through research, we validated our finding that many students were also concerned about not having the proper kitchen tools and ingredients for nutritious recipes that they would like to make. To address the concern of cost and feasibility, we conducted an interview with a current graduate student at University of Michigan Ross School of Business to assess the potential cost of our proposed solution.
PROPOSED SOLUTION: MEALSPACE

OVERVIEW

MealSpace is a physical cooking space where students can register to attend a cooking session with their friends to learn and bring home a healthy, nutritious meal anytime they want. There are two parts to this solution: registration and cooking session. Registration relies on using a website to complete the registering process; the cooking session incorporates technology into a socially engaging experience by placing social interactions among users as the priority.

REGISTRATION

Registration is a web-based process. Users first navigate to the MealSpace website, where they are directed to either login or create a new account. They are then prompted and guided through a series of steps to complete session selection. The process begins with selecting time. The duration of each cooking session ranges from 30-120 minutes. It is expected that the users can finish both a brief kitchen utensil training and the actual cooking within the duration they select. Users can also select locations of their choice based on geographical proximity. During registration, users also choose the recipe that they would like to learn or complete when they arrive at the cooking session. They have the options to specify their dietary preferences and limit their budget. The website will show the total cost of the session, which includes a detailed breakdown of the cost of each ingredient, the service fee, and the fee for all kitchen tools. The key feature of the registration is the option to invite a friend or set up a group cooking session. Users can invite through their social media accounts or emails. We encourage social engagement by promoting a cost reduction when cooking in groups. Users also make payment before attending a cooking session.

COOKING SESSIONS

The location of each cooking session is expected to be close by or located on college campuses. Once the students arrive at the cooking space, they will check in with a moderator and go to an assigned cooking station. Before the process begins, users have the option for an introductory session to walk through kitchen utensil use. At each station, there will be a tablet that guides the users through the recipe, starting with the kitchen tools and ingredients needed to complete the cooking. Throughout the entire cooking session, the moderator would be present to answer any questions and supervise users to ensure best practices when it comes to safety. Users then have the option to eat at the space or pack their cooked meals away. Finally, they would end the session by rating the recipes they learn and will receive the recipes through emails as a future reference.

INTERFACE COMPONENTS

The solution requires some sort of Internet-connected device to register for a session. During the cooking stations, tablets will be provided for step-by-step recipe and meal preparation instructions.

DESIGN PRINCIPLES

- Ease of use: The registration process includes a progress bar to show the users where they are at in the registering process. Each step is indicated at below the navigation menu, and the current screen is shown in a different color.
- Social engagement: Since students are cooking together in MealSpace, it encourages an atmosphere of working together to achieve a common goal. Recipes of different cuisines will be offered, encouraging diversity, inclusion, and awareness.
- Empowerment: By allowing students to have a gateway into cooking and eating healthier, students are not so intimidated by the notion of cooking at home.
- Self-actualization: Students are creating their meals to their specifications, instead of simply buying a pre-prepared meal.
- Sustainability: Students will be able to sustain their newfound skills by being able to receive the recipes via emails after completing it at each cooking session.
- Scalability: If students show interest, the idea could be expanded. Leftover ingredients from dining halls could also be repurposed and utilized within MealSpace.
INSPIRATION OF SOLUTION
Throughout the design process, we drew inspirations from the following designs: (1) Amazon.com for their sidebar design on preference selection, and (2) engineering makerspaces across the nation.

PROTOTYPING
We created prototypes for both the web and tablet interfaces for MealSpace using design programs Sketch and InVision. These prototypes are interactive and react to user input. We received feedback on our interfaces and design decisions at the Socially Engaged Design competition at the University of Michigan, where we presented our prototypes and ideas to both students and judges. From this feedback, we iterated upon our prototypes and designs.

CONCLUSION
MealSpace adequately addresses user needs of socializing, eating nutritious meals, and transitioning effectively to a university environment. While the physical cooking space was not our initial idea, we found that in reality, minimal technical intervention was needed to motivate students. Rather, the motivation could come from engaging with a friend or a fellow student. Following a model of continuously iterating and converging to ideas, we conducted research to identify true user needs. This is a solution that universities across the nation could attempt to adopt, starting from a small scale. Future plans include communicating with dining halls to understand the level of ingredient waste, to determine if these wasted ingredients could be used for our solution. We aim to engage the incoming college student population in healthy eating.

REFERENCES
Visualization of Chinese-Mongolians’ Encounters with Identity Dilemma

Keywords
Identity Visualization, Identity Crisis, Ethnic Minority Studies, Chinese-Mongolian

ABSTRACT
My current research project seeks to explore and examine Chinese-Mongolians’ encounters with identity dilemma living as ethnic minorities in China, a post-colonial country that consists of fifty-six ethnic groups. Mongolian culture has its own unique history, distinctive language, writing system, and different values when compared to Chinese culture. Having been “colonized” by China for over seventy years, however, Chinese-Mongolians’ culture and lifestyle has been changing and adjusting itself to the dominant Chinese culture. In developing this project, I chose to use graphic novel as the medium, but I have also been exploring possibilities of presenting this graphic novel as murals, installations, and its usual way of appearance (prints) to find the most effective way to have a conversation with my audiences. My graphic novel tells a non-linear story of a Chinese-Mongolian family and how cultural transformations affect an ordinary family and each member’s life. The story attempts to explore and reveal not only the external performance of cultural identity such as language use and physical appearance, but also inner reflections such as the sense of belonging and cultural sensitivity. Through dialogues and conflicts between two generations, this story works as a manifestation of contemporary Chinese-Mongolians’ daily confrontation of identity dilemma.

The Semiotics of Pain: Visual Pain Assessment

Keywords:
Design research, Semiotics, Healthcare, Language barrier, Patient-centered design, Co-creation, Lexicon, Taxonomy, Information Architecture

ADDRESSING WICKED HEALTHCARE PROBLEMS THROUGH DESIGN
Pain is the most common reason Americans access the healthcare system. Pain is complex and difficult to express. Use of numerical pain scales may have contributed to the current opioid epidemic. While visual systems, such as the Wong-Baker FACES scale (Figure 1), represent pain intensity, they do not indicate its characteristics or location.

![Wong-Baker FACES Pain Rating Scale](image)

How can we be comprehensive and also comprehensible when communicating pain? Visual communication may offer options that are not as language dependent. The Visual Pain Assessment is useful not only for Limited-English proficiency (LEP) patients but also for those who struggle to describe pain precisely, without needing to know a specific language focused on the characteristics of pain because you can communicate the intensity of pain with pain scale and numbers, but not the quality of the pain.

A literature review revealed that language barrier negatively affects LEP patient’s health: increases social and racial disparities, hinders effective patient-provider communication and lowers health literacy and self-agency of the patient. Early storyboards (Figure 2) articulated problems faced by...
Figure 2. Storyboard of pain communication between LEP patient and a doctor on an appointment.

Figure 3. A card sorting revealed individuals’ mental models of pain.
Figure 4. Visualize the Pain Questionnaire. Each participant answered a short questionnaire and visualized 38 kinds of pain with any medium they wish to use.
Figure 5. The Pain Lexicon, a compilation of pain visualization from “Visualize the Pain” questionnaire. The compilation revealed that Nauseating pain is visualized in two visual types: green spiral and human forms.

Figure 6. The Semiotics of Pain: Visual Pain Assessment.
patients, with possible solutions added. Card sorting workshops (Figure 3) revealed user mental models and perceptions of pain. Additional visualization workshops were given (Figure 4). I then compiled a Visual Pain Lexicon (Figure 5), where colors, shapes and visual metaphors indicate meaning. I also designed a semiotic system of pain (Figure 6) to assist the communication between LEP patients and healthcare providers.

The use of the visual metaphors enhances the quality of the pain communication by adding more evocative details, which makes easier for the receiver to empathize and comprehend the mystery of the pain (Figure 7).

Persian Typeface Design: the Process and Challenges

Keywords
Typeface, Design, Persian, Font, Arabic, Methodology, Scripts

There is a rich source of different types of calligraphy in Persian/Farsi. Each of them has its own beauty and was created for a unique purpose. Despite very different types of calligraphy in Persian and Arabic, there are extremely limited typefaces to choose from either for text or display. Farsi and Arabic type design have not been developed as much as Latin type. However, in recent decades Arabic and Persian type designers have tried to create more typefaces as well as refining the existing ones. Knowing this deficiency as an Iranian graphic designer, I started researching typeface design methods and designing a new typeface.

The Persian language has been written with several different scripts, including the Old Persian Cuneiform, Pahlavi, Aramaic, and Avestan, Cyrillic and Latin alphabets. After the Islamic conquest of the Persian Sasanian Empire in 642 AD, Arabic became the language of government, culture and especially religion. Arabic and Persian are two completely different languages; however, their writing systems have a lot in common. Modern Persian appeared during the 9th century. It is written in a version of the Arabic script and is full of words of Arabic origin. One of the main common characteristics of Arabic and Persian language is their alphabets, which are closely related. The Persian alphabet shares all the letters and the structure of the Arabic language but differs because the letter system has an additional four letters (32 letters total) which equivalent sounds that Arabic doesn’t accommodate, “ch” for example. However, Arabic and Persian share nearly 99 percent of the same letters [Iblagh, 2015]. So, although an Arabic typeface is similar to a Persian one, it needs modifications by a Persian typeface designer to make it ready to use.

There are several important characteristics of Persian writing or “Khat” which distinguishes it from other writing systems. Being cursive, connected and directed from right to left are three main characteristics of this Alphabet.

The Persian Alphabet consists of 32 (33 including Hamze) consonants [Fazaeli, 2007]. The structure of the alphabet has only 19 basic shapes, the rest of the letters are made by adding diacritical dots to the basic shapes. The letters change their shape according to their position in the word; initial, medial, final, or isolated. So, the 24 letters have four alternative shapes, and 9 letters have two alternative shapes. Thus, the set of glyphs will be up to 114. Moreover, the number of glyphs can further increase if we also count all kinds of combinations within the letters if the typeface needs to fully mimic the calligraphic handwritten Persian script.
So, according to each typeface, the number of glyphs can start with 114 and end in the hundreds (Zoghbi, 2007). While there are three main heights in Latin type design; x-height, ascender and descender; each Persian/Arabic type designer uses different kinds of heights or guidelines to make their own typefaces. I’ve used five guidelines which are Ascender, Descender, Baseline, Loopline, Toothline, Roozline for designing my typeface. These heights help the letterform to be more consistent and to have a better-structured typeface.

Furthermore, in my exploration into Persian type design, I decided to use scripts which hasn’t being used much as a base for making new typefaces. So, I used the rounded scripts to make new, modern, and legible letterforms. In fact, Persian calligraphy can be divided into two categories: the rounded scripts like the Nastaliq, Shekasteh Nastaliq, Diwani, Andelosi (Maghrebi); and the rectangular ones like Kufi, Kufi Banai, Naskh, Thuluth, etc. Iranian designers barely use more complicated, curving calligraphies for making fonts, especially the text fonts because its letterforms are not as legible as the other scripts like Naskh (most Farsi fonts are based on Naskh). The scripts I’ve used are Diwani, Diwani Jali, and Andelosi. Designing a whole typeface in Farsi is very challenging and time-consuming because a lot of ligatures (connecting letters) need to be designed (Mesghali, 2011). So, I focused on designing the individual forms and most important ligatures. Undoubtedly, I will concentrate more on the details of the typeface in the future. For making this typeface, I have tried to combine the important features of the three rounded scripts to make new forms. I want the typeface to remind us of those traditional scripts, but in a new way and with a modern look. During the whole process, I researched a lot about the history and existing methods for designing a Farsi/Arabic typeface and I end up having my own method.

All in all, there is an enormous need for designing new Persian/Arabic typefaces as well as improving the existing ones. There are no more than twenty reliable body or text typefaces in Persian nowadays. Most of them are based on the Naskh or the Thuluth Style (rectangular scripts). The other styles like the Nastaliq, Diwani, and Maghrébi (cursive scripts) are found in display or headline typefaces. During the recent semester of my MFA degree I tried to use the cursive calligraphies like Maghrebi and Diwani to create a new typeface either for display or text. I tried to keep the basic movements of the calligraphic forms and make new, modern letters. Still, there is a lot to do to refine it to use as a text typeface. I’d studied the relationship between Persian font design characteristic and font legibility before but this was the first time I’ve ever tried to design a typeface which makes me interested in this field and in finding new methods for designing Persian typefaces.
Lake Menomin Project: Exploring an Outdoor Museum Piece Using Design Research Techniques

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The Core Issue: Lake Menomin—fed by the Red Cedar Watershed in Western Wisconsin—is polluted with excess phosphorus, resulting in extreme blooms of cyanobacteria (blue-green algae).

The Design Problem: Not everyone fully understands the issue, and the community no longer celebrates the lake as it once did.

The Proposal: Create a museum-like experience from which the community and tourists can learn—and through which people can celebrate and enjoy the area.

The Design Research Goals: Learn about museum preferences from community members, and gain feedback from design colleagues to inform prototypes.

Summary:
In the spring of 2018, as part of our MFAiD graduate Design Research class, we were presented with an CHALLENGE: What if we centered our coursework on the issues of the Red Cedar Watershed and Lake Menomin? Could we use design research to both rehearse the techniques we were learning and, possibly, move toward designed solutions for this issue?

Two professors working on the algae/phosphorous issue in the Red Cedar Watershed presented their work to our class, and provided us with resources to gain key background knowledge of the problem. After class sessions spent discussing ideas for solutions, we divided ourselves into two teams, based on design expertise, solution proposals and research method interest.

My team was primarily focused on the idea of a museum-like experience to educate about and promote Lake Menomin. It was decided that our process would include a generative phase and an evaluative phase—both qualitative in nature.

This would allow us to generate new ideas and provide a creative outlet in prototyping them. The generative phase included small groups using collage to share ideas. The evaluative phase played out as sharing prototypes with our classmates and gathering feedback.
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Translation Between Physical and Digital Experiences

Keywords
Visual language, physical and digital experiences, translation, adoptive system.

DEVELOPING AN ALTERNATIVE VISUAL LANGUAGE
Forced or optional migration of people has created the need for individuals to find ways to stay connected with their family, country, and culture. Using social media and messaging apps, users constantly seek to replicate the physical interaction they previously had through digital tools.

The limitations within digital communication results in the creation of alternative ways of expressing meanings and feelings. Emojis, the pictographic language for communicating various emotions and situations, is one of the features emerged as a result of the technological interventions in our everyday communication.

Emojis could be considered as an updated version of the Isotype system (International System of Typographic Picture Education). Otto Neurath, the originator of this movement and a Vienna sociologist, was initially inspired by historical examples such as the Egyptian wall frescoes. Neurath along with designers such as Rudolf Modley contributed to visual communications by formalizing the use of the pictographic language, which includes a pictorial syntax and simplified pictographs.1

In some of the messaging apps the development of the visual language of Emojis and stickers has created more popularity. For example, inspired by current movies, news, and even inside jokes, people create their own stickers to express various feelings and situations visually. Using this visual language creates a sense of solidarity, unity, and closeness within people of the same culture. People’s interest of using Emojis and stickers supports the expansion of this method of communication. This visual language is an ongoing attempt in creating digital experiences that could fulfill the need for physical interactions and expression of certain meanings.

VISUAL TRANSLATION CASE STUDY
Although in progress, translation between physical and digital experiences is still very challenging. In our current technologically mediated communication, transfer of information without changes to the message is inevitable. The translation process between physical and digital experiences results in addition or elimination of part of a message.

In addition, there are feelings, experiences, situations, and concepts that are not easily translatable into visual forms. This untranslatability is a reminder of the concept of “imageless thoughts”, an idea first described by Oswald Külpe. “Külpe (psychologist) believed that there were certain sensations, feelings, or presentations that could neither be described nor associated in the mind with an image.”

As part of my research on the concept of translation, visual languages, and imageless thoughts, I did an experiment with two groups of Graphic Design undergraduate students at Michigan State University. Presenting a list of words to the first group, I asked them to draw what comes to their mind in thirty seconds. I collected all the drawings, presented them to the second group of the students and asked them to write what they think the drawings reflected.

The results showed that while a concrete concept inspires a specific image, abstract concepts cannot immediately be associated with a visual form. In addition, certain words such as “question” and “doubt” resulted in almost similar imagery. The untranslatability of certain concepts reinforces the need for a more adoptable and comprehensive visual language, which can be made collaboratively by users.

As I develop my research, I am planning to further explore the following steps within a group of people:

- Invite participants to have a close observation of the physical interactions they want to translate digitally.
- Work on lists and maps of various patterns of behavior during a physical interaction between two or more people in a daily conversation.
- Specify interactions, feelings, and meanings that are not easily translatable into visual forms.
- Run a test among group members to investigate how each person could translate various feelings and meanings, including imageless thoughts.
- Brainstorm speculative and adoptive designs that could potentially replace Emojis and stickers.
- Find ways of redesigning an adoptable and more collaborative visual language.

Visual languages, despite their limitations, can bridge the gap between our physical and digital experiences. Creating systems that encourages the users to be active participants rather than passive users, support adaptability, and change organically based on individuals’ needs can improve our technologically mediated communication.

NOTES

REFERENCES
3) Encourage the development of team skills and collaboration on an entrepreneurial project.

In this course, I constructed my mini-lecture materials for the discussion section, covering design thinking, idea generation, survey design, design research methods, prototyping, and marketing strategy. To mentor my students' team projects, I applied my past experience in industrial design to demonstrate concrete examples of projects from industry. As an introductory course, my aim is to inspire students by immersing them in creative thinking within a collaborative setting. My students ranged from sophomores to seniors, so I learned a great deal about tailoring the pace and content of material to the expertise and interests of the diverse student body. However, the most common problem in my class is that students don't exactly know how to identify their own creativity because lacking expertise and experience, and they were hard to apply individual creativity to an entrepreneurial creative project.

As the aforementioned problem discussed above, empirically, I discovered that the common elements of a strong team include a well leadership structure in a collaborative setting, diversity of skill sets, and different levels of creativity from individuals. First, the leadership structure in a collaborative setting means that team could be aware leadership is the act of influencing a group to reach a common goal. Previous research has shown four key types of leadership: Delegating, Supporting, Coaching, and Directing [Hersey, Blanchard, and Johnson 2008]. The student team could apply different leadership styles to their collaborative setting depending on the situation. Secondly, if the team has the wider diversity of skill sets including hard skills (i.e., design or coding skill) and soft skills (i.e., high EQ or grit), it usually leads a fruitful project outcome. Lastly, I encourage students to explore different levels of creativity from micro to macro level in order to learn their own characteristics. As consequence, we constructed three phases for students in the lecture to foster their individual creativity and lead them how to collaborate with their creative project.

**TEACHING OBJECTIVE**

**PHASE ONE: INDIVIDUAL CREATIVITY**

At the beginning of the semester, we provide their own robust working definition of creativity, including intelligence, innovation, entrepreneurship, and imagination, to cover different levels of creativity from Mini-C to Big C. Further, we discuss individual characteristics and constructs related to individual creativity, including expertise, grit, Big 5 personality factors [McCrae and John 1992], IQ, and divergent thinking. Students could assess their own scores from these psychometric tests and have a brief concept of their ability in these areas where applicable.
PHASE TWO: TEAMS’ CREATIVITY

In Phase Two, we identify key characteristics of high performance teams. Students would identify strengths and weaknesses related to their collective creative performance. In addition, we discuss constructs and characteristics related to effective work on creative teams, including Emotional Intelligence, Meyers-Briggs Type Indicator (Jung and Myers 2014), StrengthsFinder (Gallup 2018). Students could also assess their score to be aware their ability and apply that knowledge to their team participation.

PHASE THREE: LEADERSHIP OF CREATIVE TEAMS

Lastly, we discuss the central tenets of good leadership, including traits or skills uniquely important in the leadership of creative teams. Students will reflect on their participation on a creative team engaged in their entrepreneurial project. Students would learn to criticize their own and other’s leadership and followership.

References


Re-evaluating the Future of Trend Forecasting in Pedagogy and Practice

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FORECASTING AT A CROSSROADS

Trend Forecasting has been traditionally used to inspire design novelty and advance aesthetic execution. Despite an intrinsic connection to the design process, as a practice Trend Forecasting is challenged as being “too fuzzy” or not easily translated to strategic product, service, or experience applications. Today, a tidal wave of DIY trend spotters has risen from the convergence of clout-centric social networks and the democratization of design. Everyone with an internet connection can now feel capable of approximating the next “big” design movement or cultural trend, leaving the profession and practice of futures-based research like Trend Forecasting at a crossroads.

The Myron E. Ullman, Jr. School of Design at the University of Cincinnati has a vested interest in cultivating and educating design students in futures-based research. Furthering design educator’s practice and expertise in this area is a priority for several reasons, some of the primary consisting of: 1) over 35 years of teaching, honing and evolving trend forecasting within the Fashion Design Program as part of the School of Design; 2) the university’s co-operative education program, allowing for its unparalleled relationship between industry [practice-based] and academia [research-driven]; 3) and as a result, graduates of the Fashion Design program are increasingly acquiring design strategy-focused roles.

THE FUTURE OF TREND FORECASTING

Qualitative research was conducted with 12 national and international expert forecasting practitioners, in addition to analysis of leading domestic and international design programs educating students on forecasting capabilities.
This research indicates an overall shift from commercial trend reporting toward strategic, human-centered foresight and translation; from passive futures thinking to active futures doing. In this evolution, Trend Forecasting as a practice is stratified into three zones of expertise: tracking, forecasting, and speculation. Both theoretical and practical competency in each of these zones is necessary for the translation to strategic design interventions which can be focused on near-term category performance or far-term future scenarios. This transforms the practice of Trend Forecasting from a monolithic, consumption driven research methodology to one that illuminates additional pathways which amplify the attainment of strategic thinking and design translation skills in designers.

The outcome of this research suggests in order to adequately prepare students for the future of trend forecasting, as design educators, we must adapt and address the different trend translation methods inherent in each of these zones. The goal of on-going research in this area is to prototype and test solutions that address each of the zones through translation methods that yield strategic design interventions situated in both the near and far term. Codification of these solutions aim to better prepare young designers at the University of Cincinnati, College of Design, Architecture, Art and Planning, Myron E. Ullman Jr. School of Design for participation in, and as future strategic leaders of, the design industry.

Social impact design assessment: A case for social sciences framework

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This poster addresses the benefits and potential limitations of incorporating social science research and assessment methods into social impact design research.

Social impact design is gaining popularity and credence in the design profession. Academic programs and design firms are increasingly emphasizing social aspects of their design work. They are also touting their successes, unfortunately many times without post-implementation assessment. Assessment is a key factor in social impact design, and yet it seems to be the one that about which designers want more knowledge. Without assessment, design research cannot clearly articulate its benefits and nor can it be sufficiently appreciated and understood. Assessment is a necessary component of design projects and a core competency for the designer of the future. It is critical to building and learning from design research. We don’t have to invent the assessment wheel. We can borrow from the other models and then make modifications as appropriate. Having a conversation about these possibilities can help shape its future. One avenue to incorporate assessment while also bolstering the foundation of social design is by incorporating a social science research framework. This poster will address effective ways of incorporating social science research and assessment methods within design research, models others have adopted, adapted or considered and to what end, and factors might invalidate research results or create unproductive research.
Museums as Experiential Learning Labs: Developing User-centric Interactive Exhibits Through Observational & Participatory Research

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For educators wanting to introduce new and effective ways to include user-centered research in a design studio course, interactive museum exhibits can provide an efficient opportunity for students to inconspicuously observe many users without needing to set up formal observational studies.

It can be challenging engaging students in observational research, which requires the design and approval of official protocols, recruitment of subjects and scheduling of user testing.

By conducting research on interactive museum exhibits in Chicago, graphic design students from Iowa State University are able to circumvent many difficulties associated with conducting user studies in a classroom setting.

In their museum-based user research, students determine the intended outcomes of each exhibit by watching visitors’ interactions with user interfaces and experiences. Through photographs and writing, they analyze why some interactions succeed while others fall short.

Armed with insights into how visitors really use exhibits, the students are then able to design exhibits for Chicago’s Field Museum that include prolonged visitor engagements. These interactions successfully facilitate learning by employing methods that effectively engage and educate the museum’s audience.
On teaching design research to undergraduates

**Keywords**
- AIGA Designer 2025, basic research, design education, design research, knowledge generation, research process, undergraduate education

**WHY WE TEACH DESIGN RESEARCH**

At SUNY New Paltz we believe that broadly educated individuals make terrific designers, so we capitalize on our position within a comprehensive, liberal arts college community. We encourage students to select general education and elective courses to support active engagement with design as a cross-disciplinary practice that includes knowledge generation.

I inaugurated our Design Research course a dozen years ago. Since then it has evolved into a junior-level, 3-credit, semester-long prerequisite for the two-semester Graphic Design BFA senior thesis sequence. Whether or not students carry their research topics forward into their thesis projects, experiencing research as a process of inquiry, discovery and dissemination is energizing and empowering.

**COURSE DESCRIPTION**

ARS329 Design Research introduces basic strategies in primary and secondary research for graphic designers, including: literature reviews; surveys/interviews; text, object and image analyses; and ethnographic approaches. Methods lead to both quantitative and qualitative analyses.

A virtually complete transition to an information-based economy means that students should be ready to go beyond providing structure and style to already established content. Their ability to identify, research, represent and design for issues of interest and concern creates possibilities for a fulfilling and evergreen practice.

**HOW WE TEACH DESIGN RESEARCH**

The class is exercise-heavy at the front end: we build a skill and knowledge base that moves from secondary to primary research methods. Students take the basic CITI training for human subjects research (they pursue HREB review and approval as needed), research and write literature reviews, [rel]-learn methods of persuasion and semiotic principles, analyze advertisements and cultural artifacts, and observe/document people in situ. They gain practice in writing surveys and conducting interviews (the College has a contract with Qualtrics, so this is the tool we use). We spend a lot of time moving data from its raw state to visualization...
and interpretation. In this phase, exercises go back and forth between the students and me as basic principles are mastered.

During the second half of the course students work on research projects of their own choosing. The topic may be an aspect of design/design practice, or it may be research unrelated to design per se that nonetheless could support a design project. The topic should be of interest to students or an issue of concern for them.

Students develop proposals, including a preliminary literature review, for my appraisal. Final projects are comprised of the students’ literature reviews and the planning, carrying out and analysis of two complementary primary research methods, one of which is a student survey. Their research culminates in a written paper and, since Spring 2015, a poster session open to campus colleagues. Posters have proven to be a really satisfying addition to students’ experience of the course and satisfy the hankering to design something. And it’s validating for students to share and celebrate their hard work.

OBSERVATIONS AND OUTCOMES
From Spring 2015 onward—with the exception of Spring 2016 when the students and I took on a research project for our campus library—the course has been taught as described above. In Spring 2015, students were required to focus their research on issues of identity and social justice; in subsequent semesters topic choices were not constrained. In three and a half years 94 independent research projects have been undertaken in these 30 content areas:

Academics and education; accessibility; body image and representation; campus-specific issues; commuting students’ issues; culture; designed objects: form and functionality, drug and alcohol use among students; economics; ethics; ethnicity and race; fashion and make-up; food; friendship; gender issues; happiness; health; interpersonal (live) interactions; language and meaning; music; people and technology; political attitudes and processes; religious beliefs; increasing safety within specific environments; sex and sexuality; sexism; skill development; sleep; stress; time management; and transportation.

Of the 94 projects, 44 were tightly focused on a single topic. The other 50 projects each spanned more than one topic area. Two recurrent favorites: how people use technology and interpersonal relations.

Students are generally surprised by their data—and often by what their chagrin reveals about their own assumptions about the phenomenon they are studying. The moment a student is sure that their data is “bad” is a true turning point and leads to a shift in mindset from “proving” an expectation to being receptive to what has actually emerged.

ASSESSMENT
Although I have not used AIGA Designer 2025 to guide course content, here’s how the course currently maps to trends identified in the document:

• During the exercise phase I choose materials that problematize social and ethical issues and the designers’ role (Core Values Matter)

• Their literature reviews and annotated bibliographies provide practice in finding, interpreting, describing and applying information from multiple sources (Accountability for Predicting Outcomes of Design Action)

• Particularly during the project phase students come to an acute awareness of their issue within the context of larger and very often interrelated systems—technological, political, cultural, interpersonal, economic (Complexity)

• Students are using human-centered research methods, mapping people’s interactions with others, in their environments, having experiences and using objects (Accountability for Predicting Outcomes of Design Action)

• The project timelines orient students toward steps, tasks and resource needs. In the process of visualizing their data we work through issues of language and audience (Resilient Organizations)

• Final reports and research posters provide an opportunity to summarize and present their research (New Forms of Sensemaking / Accountability for Predicting Outcomes of Design Action)

AIGA Designer 2025 will be useful in informing future iterations of the course.
Figure 1. Matt Precioso and Emma Seager pose with their research posters in December 2017. Matt investigated millennials’ beliefs about themselves and Gen X’ers. Emma researched student self-perceptions of the effects of smartphone use on personal productivity. Photographer: Patrick Pearson

Selected Resources


Hall, Sean. 2012. This Means This, This Means That. London, UK: Laurence King Publishing.


Civically-driven design curriculum grounded in sustainable community partnerships

Keywords
Community-Engaged Learning, Social Design, Experiential Learning, High Impact Practices, Interdisciplinary Collaboration, Design for Good

STUDENTS, THE INSTITUTION, THE COMMUNITY
PUBLIC RESEARCH INSTITUTIONS

As a part-time graduate researcher at a large public research university in 2011, I found myself among 40,000 students in a sea of self-driven investigations. Compelled to finally leave my full-time design position, I hoped to focus my individual research topic on something more meaningful than the deadline-driven life I was living. Titled “Community as Client: Defining social design as a means of designing for good,” my thesis focused on the belief that designers have the power to make social change happen in their own communities and their own career.1 While researching and teaching undergraduate foundation design courses at Purdue University, I found that these two sections of my career were independent from one another other. Very rarely did I have the opportunity to talk with my undergraduate students about the topics that I was researching.

Although the research was very timely with the revival of the First Things First manifesto, I was perplexed when considering where this research would take me in the long run. The goal to unite community driven design initiatives with my future academic career felt far-fetched. Little did I know, this particular research would bring me full circle as a socially-driven design educator several years later.

Today, I oversee the Integrated Media Arts program in a rural, picturesque liberal arts environment. Juniata College has the mission to “provide an engaging personalized educational experience empowering our students to develop the skills, knowledge and values that lead to a fulfilling life of service and ethical leadership in the global community.” Rather than asking students to design conceptual work, we directly relate our coursework to this mission with a real world problem including variable guidelines.

WHY A SMALL LIBERAL ARTS ENVIRONMENT WORKS

Over the last four years, I have been able to find clear and concise intersections between academia, community, and the design industry. In the collaborative liberal arts environment at Juniata College, faculty concentration is geared heavily on teaching and student assessment rather than that of a large research institution such as Purdue University, which focuses on traditional forms of publishing self-initiated research.

The intellectual environment at my current institution boasts faculty-student relationships and identifies advising in addition to student mentorship as a key component of personal evaluation for tenure and promotion. This unconventional institutional standard has allowed me to reimagine a design curriculum that focuses on connecting the campus with the greater community within the traditional academic world. During the process of curricular redevelopment of the Integrated Media Arts Program, I was able to focus on merging my academic agenda with the institutional mission by connecting the campus with the local community.

Juniata College is situated in a small rural town; the town I grew up in and left nearly two decades ago to seek an education. Prior to departing my hometown, Huntingdon was a thriving municipality with active storefronts and a bustling main street. Today, longtime family owned businesses are struggling to connect to the younger college audience. In addition, many local organizations and nonprofits lack the technology skills and resources to continue to exist in the world their consumers currently reside in. This is when my personal community interests merged with my academic responsibility.

In the fall of 2014 as a new faculty member at Juniata College, I was tasked with teaching undergraduate courses ranging from principles of design, design technology, in addition to overseeing undergraduate research.
interdisciplinary program I also needed to find a way to engage non-design students with design curriculum. I felt empowered to teach design curriculum with a focus on learning by doing. Now, prior to launching any client based project in the classroom, we run through a series of design blitz workshops to prepare for client meetings. I focus the start of the semester on identifying “problems” and then associate them with realistic visual deliverables. This exercise allows students from all areas to connect their individual abilities to the project.

Figure 1: Fall 2017 Integrated Media Arts students identifying campus-community problems.

Following our first client meeting, the design team works from the start of the project identifying project goals and parameters that merged well with their skills and talents. The students must develop sustainable solutions that the client can continue to maintain by considering the end deliverables, the platforms, and most importantly the use of the proper technology.

Once the work is complete in the lab environment, student reflection is a key to the continued success of the newly developed curriculum. We utilize multiple forms of service learning rubrics to identify project goals and parameters in a reciprocal way. The assessment outcomes have solidified the argument: the type of knowledge this design research has generated confirms that community-engaged design curriculum is a key component of any undergraduate design course.

CONCLUSION
Academic institutions that focus solely on curricular efficiency, assessment, and student outcomes may not be as motivated to offer experiential community-engaged learning. Concurrently, this type of instruction may not deliver any of the aforementioned results. I would argue that this type of experience is not only important to the students but also to the academic institution. My current role has solidified my belief that design curriculum should no longer focus on mock design projects for non-existing clients, but rather on multiple civically driven design initiatives with variable outcomes. Offering such curriculum not only allows for the students to have more in depth education, they are also offered the opportunity to engage in profound experiences that allow them to enter the world as civically driven designers and citizens.

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END NOTES
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The Semiotics of Pain: How design impacts the communication of pain

Keywords
Design research, Semiotics, Healthcare, Language barrier, Patient-centered design, Co-creation, Lexicon, Taxonomy, Information Architecture

SOLVING THE WICKED PROBLEM: OUR EXPERIENCES WITH PAIN ARE UNIVERSAL, YET UNIQUE.

Pain affects more Americans than diabetes, heart disease, and cancer combined: It is the most common reason to visit doctor’s office, and it is the leading cause of long-term disability and increased healthcare costs.1 In healthcare settings, pain has traditionally been assessed using a Visual Analog Scale with faces (Figure 1) or, less frequently, the McGill Pain Questionnaire (Figure 2). The McGill Questionnaire requires patients to read and comprehend more than 150 words and answer 78 questions.

Figure 1. Wong-Baker FACES Pain Rating Scale.

Wong-Baker FACES® Pain Rating Scale

0 = No Hurt
2 = Hurts Little Bit
4 = Hurts Little More
6 = Hurts Even More
8 = Hurts Whole Lot
10 = Hurts Worst

Though comprehensive, the McGill Questionnaire is hard to comprehend, particularly for patients with limited English proficiency. Elaine Scarry, author of the seminal book The Body in Pain, notes the “inexpressibility”2 of pain. Even for native English speakers, describing pain is challenging. Pain assessments like the McGill Questionnaire seek to describe pain through nomothetic constructs, although pain itself is idiographic and idiopathic.

VISUAL COMMUNICATION MAY OFFER LANGUAGE-INDEPENDENT OPTIONS.

Meaningful visual communication has the potential to transcend the language barrier. Otl Aicher’s pictogram designs for the 1972 Summer Olympics in Munich used as little wording as possible and yet communicated meaning across hundreds of languages.

Based on research into pain, I propose a workshop where designers as critical and conceptual thinkers tackle the universal-yet-individualistic and distinctive-yet-similar problem of pain. Pain is a medical problem, one that involves communication, service, and expression. How can designers approach the communication of pain?
THE PAIN LEXICON: CO-CREATING A ROBUST ARCHIVE OF PAIN.

Participants will create a 6-second video to convey and share the characteristics of pain. A video includes metaphors and visualization often neglected in traditional pain assessment. Successful videos would better enable viewers to empathize with the pain being communicated.

Videos would be added to the Pain Lexicon, a crowd-sourced library of pain, which prepares patients to become competent in explaining and expressing their pain. This robust archive of user-created videos enables users to share and learn from each other.

By nature, pain is complicated. It is hard to communicate with just words or static images. The videos will help to better capture the complexity and transformation of the pain. Better comprehension of pain may yield faster and more accurate diagnosis.

ENRICHING THE VOCABULARY OF PAIN

The goal of the Pain Lexicon is to create an archive where patients can learn and apply other metaphors to gain competence in explaining and understanding pain. It is a patient-centered pain assessment.

The Pain Lexicon focuses on three major features of the pain (Figure 3):

- **Where** is the pain? (Location)
- **What** kind of pain? (Characteristics)
- **How** bad is the pain? (Intensity)

The Pain Lexicon can be used during person-to-person interactions [such as in healthcare settings, workshops, etc.] to facilitate understanding between parties, or in an individual setting, using an app. The app aims to help individuals better understand their pain as they attempt to communicate it. The app prototype below describes its use in an individual setting.

APP PROTOTYPE DESCRIPTION

Participants of this workshop can validate the concept of the app and inspire design improvements for the better usability of the app. Each user will be asked to visualize their pain by taking a 6-second video using a household item to express their pain. In this way, we can transcend the language barrier.

First, the user will indicate the location of the pain by placing the problem area in the center of the square. Next, the user can either start shooting a video using household items to represent the pain. For example, using a fork to poke the mannequin represent pricking pain (Figure 4).

After shooting a video, the user will tag the location and characteristic of the pain. The app will help by showing pre-categorized word bank of pain. Also, the user can narrow down the kind of the pain by answering a few questions like:

- Is your pain sharp or dull?
- Is your pain constant or comes and goes?
- Does your pain get worse as time goes by?

or selecting a visual metaphor (Figure 5) such as:

Figure 4. The Pain Lexicon wireframe.

Figure 3. The pain identification model used in the Pain Lexicon.
Using tags, the user can view videos of specific kind of pain as a whole. For example, the user can browse all #BackPain. In this way, the user can find similarities and possibly even discover a perfect video that represents their pain at the doctor’s appointment. After videos are saved, they will be converted to .GIF image format so that user will be able to browse through without playing the video.

**VIDEO STRUCTURE**

Videos would loosely follow this structure: describe the location, the characteristic and the intensity of the pain in a video, and caption using appropriate hashtags (Figure 6). A video must be shot in a portrait (vertical) layout.

![Figure 6. The Pain Lexicon video structure.](image)

**END-NOTES**


**Artificial societies as a tool for design research of emergent interactions**

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**Keywords**
Emergence, complexity, agent-based modelling, design research methods

**Introduction**

An observation of current design trends and tendencies, both on the professional spectrum that is moving toward service design and the contemporary principles of design, shows the significant relevance of the inclusion of the theory of Complex Systems (Von Bertalanffy, 1928) in the design process and design research to allow designers to map and understand the complexity that arises from the size and diffusion of current problems (Ing, 2014). As design moves into larger scale problems, connected objects, mass production and long-term policymaking, the role of the designer requires the inclusion of systemic factors and large-scale mapping (Sevaldson, 2017).

The same analysis has also acknowledged the need for designers to recognize the core values that support human relationships inside a system (Berger, Sijmons & Hoeks, 2009), and move the notion from the common perspective of Human or User-Centered Design that implies a role for designers as truth holders that are in charge of identifying the needs and requirements of others, to a collaborative process of acknowledgment of the underlying values of social groups and entities, the agency of communities on the construction of their reality (Manzini, 2008), and the repercussions that emergent values and behaviors can have in the application of specific design principles.

This paper presents an initial intent to review the conceptual intersection between System Theory (Von Bertalanffy, 1928, 1968) and its different modern updates for social systems,
especially the use of digital simulations of complexity, and the Design Research perspective and connections with systemic thinking, to later on recognize possible scenarios for future research on the area. Our initial observation has shown that the origin and references of both theories have significant common spaces and authors, and yet, the use of these methods for research does not appear to be significant on the design research literature.

We propose the use of simulated in-silico ecosystems where core social values and social complexity could be parameterized, as a viable tool to map the emergence of collaborative behaviors on specific agents (Terveen & Hill, 1998), and observe the diffusion of these behaviors inside the system. We expect that our theoretical framework elicits the interest of the Design Research community and opens the landscape for large in-field and simulated experiments.

THE EMERGENCE OF COMPLEXITY ON SOCIAL SYSTEM MODELS

Complexity has become a significant subject of concern and research on many disciplines in the last decades, mainly because there is a growing need to investigate implications on larger systems, forecast possible repercussions and understand issues of a larger scale. This idea of studying reality as a complex network rather than a linear one was largely introduced by Von Bertalanffy (1928, 1933, 1968) as part of the General Systems Theory (GST). Since then it has been used in many fields as a reference for the observation and analysis of research subjects. Von Bertalanffy (1972) explains this phenomenon as a response to the principle of simplification or simplicity that has been used as one of the foundations of the scientific method (Blumer, et.al, 1987).

This idea introduced by GST, was first intended from the biological perspective, with the goal of producing a model that could recognize the complex connections on larger systems; but further developments presented in other fields (Köhler, 1927; von Bertalanffy, 1952; Kuhn, 1962; Laszlo, 1971) have shown that the theory could be applicable to any research domain, even to recognize the production of knowledge itself (Maturana & Varela, 1987). Nevertheless, some views of the GST propose the complexity as a natural variable on certain systems, assuming that other systems might not present this quality. For this paper, we rather use the definition presented by Edmonds (1999) that states that the notion of complexity is a concept that is defined by the mapping process or the construction of the model of a system. For Edmonds, complexity is a natural, permanent principle of reality and the fact that many disciplines or processes do not include it in their practices is because of their need for simplification and the definition of close subsystems that provide a better field for theory construction, rather than the non-existence of complexity in those spaces. Complexity is a principle that emerges in the definition of conceptual models, and from the
significance or impact of the actions produced in other areas of the system. Complex changes become evident when it is not possible to predict the output of a system, even though there is pre-existing knowledge of all the inputs. As Mitchell points out, complex systems follow the second law of thermodynamics: “the entropy [...] will always increase until it reaches its maximum level. It will never decrease on its own unless an outside agent works to decrease it.” (Mitchell, 2009, p.042). But the forces taming with entropy do not need to be endogenous; they could come from the interaction of the system’s constituent agents. Applying the concept of entropy to Darwin’s theory of natural selection and evolution, Mitchell illustrates how ecological systems exhibit entropy when species compete with each other, or individuals compete with others of the same species. Each individual transforms energy from their environment but only those who do it appropriately and efficiently thrive. As a result, selection and evolution emerge from interactions between individuals. On this view, there are no external “hands” selecting the survival specimens.

The definition of complex problems in the social sciences mirror systems complexity on several accounts. The boundaries of the system are fuzzy, small changes make for big differences, system components are networked rather than linearly organized, and the system has state transitions as interactions between its constituents unfold. In spite of systems entropy, social systems exhibit some stability around some strange attractors (Byrne, 1998). It means that the output space of social systems is not wide open but defined within the domains of some relational models. Under the name Relational Models Theory (Fiske, 1992, 2004), Fiske introduces a theoretical framework that describes how people regard interpersonal interactions, and how such operations shape the primary standards of social morality. This framework is extremely actionable when it comes to instantiating norms, motives and moral principles in mediating artifacts.

DESIGN RESEARCH AND COMPLEX SYSTEMS

General systems theory was initially presented as an academic approximation to produce a better model of understanding of biological systems (von Bertalanffy, 1928). While the scientific model has been beneficial for the construction of a large number of theories about the order of things, it fails to produce a clear understanding of systemic changes and the emergence of complexity on those systems, therefore its large adoption in other areas, especially in social sciences.

Design has been another area where complex systems and dynamic systems have had a significant impact. In fact, we can track certain common theories and authors to design theory and systems theory. Von Bertalanffy (1972) recognizes the work of Wolfgang Köhler (1927) on the Gestalt movement like one of the most significative and thorough systemic view of human perception and cognition; work that became one of the foundations for the design movement of Bauhaus (Behrens, 1998).

Edmonds & Meyer (2015) argue that the work of Herbert Simon (1947) and his desire to understand and model complex human behaviors was one of the origins of the computational work on complex systems. This idea of the construction of models that can represent the complexity of human interactions presented the foundation for a whole new area of theorists that found the role of design as an important one on the construction of reality, and the use of models as a proper way to make sense of them. Among the most significant we can include the work of Christopher Alexander (1964) on the definition of the design process model, and the later contribution of Bela Banathy (1996) on complex social systems, that later on helped to define some contemporary models of design thinking. The work of Simon (1947, 1956, 1969, 1976) also produced some of the most significant theoretical bases for disciplines like economy or design.

Another connection between systemic thinking and contemporary design theory is the work of Rittel and Webber (1974) situating one of the objectives of design at the search for solutions to complex problems, or what they defined as wicked problems. This notion of fuzzy problems that are hard to define and to address due to the long ramifications and connections inside the system, perfectly aligns with the later definitions of complex problems of Byrne (1998).
The ideas of complex systems and a systemic view have led to theories like the ones of biological cognition proposed by Maturana and Varela (1987) that support ideas of a different type of knowledge (Merleau-Ponty, 1945; Polanyi, 1966) that have been central for many design theories. Recently, the work of Jones (2014) and Sevaldson (2014) have become some of the latest reference to the idea of an intersection between design theory and system theory, exploring the current need for designers and design thinkers to recognize the complexity of human interactions and social systems and the possible unintended consequences of designed solutions on a larger scale. Their work has opened the gate for designers to start working on the design for policy making and complex social systems.

SIMULATED SOCIETIES AS A METHODOLOGICAL ADVANCE OF SYSTEMS THEORY

Through this paper we have recognized the proximity between GST, complex or dynamic systems theories and design theory, and yet through our review, we haven’t been able to find clear evidence in the design research literature of the use of agent-based modeling, one of the state-of-the-art systemic thinking tools. We are referring to the use of computational models of social systems to run simulations of artificial societies in which instances of people interact with each other, as well as with designed objects. From the simulations, it is possible to analyze the emergence of behaviors, like collaboration, cooperation, coercion, or aggression, as a result of design interventions in the environment.

We can situate the initial theoretical advances in the work of Herbert Simon and Jay W. Forrester (Troitzsch, 2015) with his developments on System Dynamics. Both carried the idea that social complexity could not just be analyzed but also modeled and forecasted. The early work of Forrester simulating social dynamics for ethnographic analysis cemented the foundations for computational models of social complexity.

An artificial society is composed of a stage (also called world). The stage contains agents, representing either people or artifacts -- this entails the ontological possibility of endowing agency to nonhumans. Every agent is scripted to behave according to the underlying relational values we want to explore. In the end, we will observe the output of synthetic human agents engaged in social interactions mediated by different versions of synthetic nonhuman agents. Such methodology has implications in the study of design for complexity in several fronts: in modeling and understanding agency, in modeling an understanding social relational models, and in modeling and understanding the large impact of information design (visual or tangible) in social interaction.

RESEARCH OPPORTUNITIES

This initial review of the areas intersecting the GST, the systemic thinking and the design research, has helped us to recognize a very important space for design research and a plausible methodological contribution by borrowing the techniques of simulation of artificial societies used in social sciences.

We have to recognize that design does not have a long tradition of research in the unplanned outcomes that emerge from the deployment of design solutions or the so called unintended consequences (Campbell, et.al., 2006). We believe that part of this problem is due to two factors: First, the strong emphasis on future research, especially during the first part of the design process, that leads to underestimating the requirement of constantly observing the life cycle of solutions. Second, the majority of the design thinking and design process models, stop at the deployment of the designed solution and do not propose a methodic analysis of its repercussions.

We consider that the recursive analysis of design outcomes as a major requirement for designers and a necessary addendum to the design process model. This requirement seems significantly important when working with complex social problems where the observation a posteriori of the implications can be too costly, both socially and economically. This requirement for new models to predict social outcomes has been stated by De la Rosa (2017). On his model, he proposes the value and needs for designers to capture information on the physical interaction with objects. He argues that this is an important and sensible
Moreover, ABMS not only could be used to forecast emergent behaviors but as a platform that could improve the process of recognition of the different design variables on a complex scenario. We believe that once a simulated society is set-on-place, the researcher can release some of the cognitive burdens that complex major factors have on the design process and focus on the search for invisible factors and low signals (Harris & Zeisler, 2002).

Some of the initial experimentation performed by the authors suggest that the use of physical sensors and the collection of data of the actual interactions of experimental subjects on real interactions can provide an important new layer of information for the computational models of simulation, and reveal the emergence of human and non-human interactions that common simulation models would not consider.

CONCLUSION

We see a significant conceptual space for design research opening on the field of simulated societies, but it is not just one that works unilaterally for the gain of the design research field. If there is a possible forecast to be made of the advances of simulated technologies both for design researchers and for systems researchers, is the growth of the field that could be produced by the addition of some of the methodologies of design research.

Forecast possible unintended consequences and the emergence of social behaviours is an vital task for current researchers, especially since the actions of humans and the artificial environment has grown to unsustainable levels. And although this has been a role of forecast and social sciences, we believe that design must assume an active role on the research of future systems and a better understanding of the repercussions of its actions.

This paper calls for a larger research on this area and for future collaborations between the different disciplines of systemic thinking to better understand the tools and search for new improvements on the field.
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BridgeBrain: Engaging with the Next-Generation of Academic Scholars

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Keywords: Interdisciplinary Collaboration, Academic Research, Mentorship, Student Engagement

INTRODUCTION:
Today, professors are involved with student advising, academic research, steering committees, teaching courses, and other-related endeavors to ultimately pave the way for applying and earning tenure at their respective universities. To ease their academic workloads, share their knowledge, and engage with the next-generation of academic scholars, university faculty leverage word-of-mouth, classroom and e-mail announcements, along with department bulletin boards to communicate and share their research projects and opportunities with students. These inefficient one-way communication methods affect faculty with time-sensitive deadlines, who waste time seeking and interviewing students, who lack training as research assistants. Professors will be looking for experienced research assistants, who can perform basic research functions to help with their proposals, research papers, and projects for publication in academic journals to demonstrate expertise in their area of research.

Students have a harder time seeking professors to form part of their research projects and committees. They waste valuable time seeking advice and guidance from peers and professors to find the right match to achieve their academic goals. Most students want to become experts in a topic area via academic research to demonstrate their culminating experience in a thesis defense before university faculty or publish their findings in academic journals to meet their department requirements for graduation and advance their future careers.

There is a clear disconnect between students and professors with timely responses for shared research interests on projects and identifying the right skill sets for academic research. To support their respective needs, professors and students need BridgeBrain, a web collaboration platform that allows two-way communication in real-time to find and identify research interests and projects via an established peer-to-peer university network that breaks down silos and barriers to bridge academic research and student success at colleges and universities.
TARGET USERS:

Professors

- Professors seeking professors for research: Junior professors who are seeking to collaborate with other professors on a research project.
- Professors seeking students for research: Professors who need someone with specific skill sets for a small task that will add a lot of value to their project.

Students

- Students seeking students for research: Undergraduate or graduate students seeking peers to work on a topic of their interest. These peers have different academic majors and backgrounds but remain interested in exploring topics that are innovative and add value to their fields of expertise as it relates to academics.
- Students seeking professors for research: Students who are new to conducting research and aren’t experienced, so they’re searching for a professor to gain guidance and experience with academic research.

DESIGN AND FRAMEWORK:

Users can create unique profiles tailored to their background, skill sets, research interests, resume, and on-going research projects by using their university email address and ID number. Once their profiles are created, professors and students can search for members to build and expand their research teams. Students can filter posts by paid positions, publication in journals, certificates, scholarships, and other related items to create custom searches to suit their specific project or research goals. Ultimately, a secured messaging system is available to connect with potential collaborators to request a meeting or a chat with peers, who have similar research interests and align goals for the outcome of the research project.

Once a research project is completed, students rate each other based on time management skills, professionalism, commitment to the project, and other related characteristics that allow a student to be effective and successful when becoming a part of a research team around an academic topic. As such, professors are also rated by their peers and students using similar characteristics to ensure information is open, fair, and transparent for those users, who choose to become a part of this university peer-to-peer network of scholars. To spotlight specific projects, students, and professors on an ongoing monthly basis, those who achieve the highest rating by their peers are highlighted in each of those categories on the main homepage. As a result, this becomes an opportunity to celebrate their hard work and sacrifice in a manner that provides academic recognition and honors their monthly contribution to academic research at universities.

CONCLUSION:

BridgeBrain facilitates finding a collaborator for research projects by allowing users to search for collaborators using keywords for skill sets, background, research interests, and current research projects. It allows students to engage and collaborate with professors to gain research and industry expertise. Many of these students are new to conducting research and aren’t experienced, so searching for the right professor to gain guidance and build valuable skill sets with academic research is fundamental for their future careers. As academic experts, professors become mentors, who can share real-world experiences as it relates to conducting different forms of research in academia.

These students are interested in exploring topics that are innovative and add value to their fields of expertise as it relates to academics. As a result, students extend their knowledge through mentorship and hands-on experience through a variety of engagements in research. Students perform and understand different forms of in-depth research and how it’s conducted with faculty, while professors get assistance with their academic workloads.

Strategically, professors can focus on achieving several academic goals like tenure at their university and simultaneously, mentor the next generation of academic scholars with best practices in research. As such, students gain experience with manual input for statistical references, research gathering from archives or Internet-based resources, and conducting different forms of coding. After this experience, students gain an understanding with basic research methods and processes, which allows them to become potential experts in their respective fields via mentorship and professional guidance.
The “Designumentary”

Keywords
problem-based learning, visual storytelling, praxis, information graphics, motion graphics

COMMUNICATION DESIGN PROJECTS

Drawing inspiration from Professor Gunner Swanson’s essay, “Design and Knowledge in the University and the ‘Real World,’” in graduate school (at MassArt’s Dynamic Media Institute) I developed seven projects that were guided by four interrelated themes introduced by Swanson: communication, expression, interaction, and cognition. According to Swanson, these represent four broad areas that graphic design could bridge. Based on this research I have developed a series of undergraduate graphic design projects that further bridge these four themes, while introducing students to the methodologies of design research through communication design. With this research I hope to renew a conversation around Swanson’s four themes, while providing examples from my own teaching and research.

What is graphic design? Throughout my graduate thesis “The Education of a Communication Designer” I re-examined “graphic design” and placed it in the broader context of “communication design”—a comprehensive field that posits a wider range of media, disciplines, technologies, and applications. Much of the research and inspiration for my thesis was derived from Steven Heller’s anthology “The Education of a Graphic Designer,” to which the title of my thesis alludes. This thesis document represented both a personal shift but also a broader shift in the graphic design profession in the past ten to twenty years. This shift is marked by an expansion of the kinds of problems a graphic designer is asked to solve and what artifacts they are producing. Graphic designers continue to produce communicative artifacts (printed, environmental and digital), but now we can also help create experiences, interactions, and systems. This shift has deeply informed both my practice and my teaching. Below I chronicler two examples of the “Designumentary” a communication design project I have explored with my undergraduate students, first at Massachusetts College of Art and Design, or “MassArt” (a BFA program) and later at Merrimack College (a BA program).

THE DESIGNUMENTARY AT MASSART

In the Fall of 2016 I co-taught a section of Sophomore Studio, an introductory design class for students who recently declared their major as graphic design. I co-taught the class with Professor Martha Rettig, and our charge was to reformulate the class as part of a broader restructuring of the curriculum aimed at introducing the principles and methodologies of design research earlier in the program. Below is an excerpt from our project sheet:
A CONVERSATION STARTER

Compared with more conventional graphic design assignments this project consistently fosters an extremely high level of contextual research, media exploration and innovation. Students are pleasantly surprised, as they begin to see for themselves how graphic design can be used as a vehicle for research and whose media are often extended to those embedded within a broader context of communication design.

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In this 4 week class we will learn to talk to people before assuming we know the best solution to a problem or answer to a question. Once we ask the right questions, (and lots of them) our audience will uncover problems and realizations different from our assumptions, and in turn we will be able to communicate more accurately. We will use established methodologies and techniques for human-centered design including IDEO’s Field Guide to Human-Centered Design. As designers we have played a big part in the success and failures of businesses, communities and for better or worse even elections. Your group will have the opportunity to select a topic and research it using first hand accounts. We will learn about researching and targeting demographics, conducting in-person interviews with “users”, conducting competitor research, and how to keep asking questions until we identify the true answers and problem. We will document and present the research process using video footage, storytelling and motion/information graphics.

In this team-based project each student team was asked to deliver a video (2-4 mins) that included footage from original interviews, information graphics, a narrated/voiceover script, “B-roll” and/or research process footage (Fig. 1). Each team was also asked to submit process materials including research material, storyboard sketches and a 12” x 18” “poster” with a short description of their project. Each team was allowed to select from 4 topics: Voting, Why We Lie, Best Coffee in Boston or Cycling in Boston.

THE DESIGNUMENTARY AT MERRIMACK COLLEGE

Based on the project at MassArt I reintroduce an adapted version of the Designumentary project at Merrimack College in my Motion Graphic Class. The students were given similar parameters as the MassArt project, but all students were given the same prompt. To research and compare the United States and Norway based on five, self-selected criteria based on initial comparative research. The project resulted in a wonderful range of solutions (Fig. 2), themes and approaches from hand done illustrations and graphics to a topical “museum” created in virtual reality.
Learning from the Social Sciences to Create Research Methodologies in Communication Design

DANIEL WONG

Keywords
Design theory, social science, inductive research, deductive research, design research, research methodology

APPLIED AND ACADEMIC DESIGN RESEARCH

Three is a problem, currently, with design research, particularly communication design research. Too many in the field are approaching design research as if it’s never been done before and there’s no existing structure. But in fact, nearly all design research falls into two types, both of which are actually rather well developed.

The first type is product research, that is, the application of design. Designers in industry do this task all the time, though they may not take it to a level that would be considered “scholarship” by writing about their process and conclusions. Theirs is an iterative process – identify a problem, define specifications, brainstorm, select a path, create a prototype, test the prototype, and make improvements, and repeat. Such a process mimics much of what is done by applied engineering design and hence there is no need to reinvent that wheel.

The second type of design research is less about developing and testing products, and more about developing and testing theories. Again, this type of design research is not new. Nearly all design theory is looking at the human impact of design. We in communication design are hardly the first to examine the human impact of design. Environmental psychologists have been doing this for decades. Environmental psychology is an interdisciplinary social science and my assertion is that communication design is also a social science, and should use the research principles that have been clarified over decades by social scientists.

COMMUNICATION DESIGN AND ITS DEFINITION

For clarification, it’s helpful to examine what communication design is. Put simply, it’s the design of information for efficient and effective consumption. This is true whether it be within the structure/context of a newspaper with catchy headlines, or the organization of information in a complex corporate website, or an editorial illustration or photograph that sums up a topic and inspires a viewer, or a video that tells a story and sends a message by evoking emotion, or something as impersonal as the organizational structure of data within a database, allowing humans access to information via software.
In nearly all cases communication design organizes information for human consumption. My assertion is that the human component makes communication design research a form of social science.

**APPLYING SOCIAL SCIENCE IN COMMUNICATION DESIGN RESEARCH**

In broad terms social science research is either theoretical, or empirical. Social scientists are either taking empirical observations and building a theory using those observations (inductive research). Or they are testing those theories with empirical research (deductive research).

The empirical tests and observations developed in social science can either be quantitative or qualitative. Neither is “better” because each type of research compliments the other and often sheds light on truths / human experiences that can’t be adequately understood in other ways.

**DESIGN RESEARCH LOOKING FORWARD**

Designers and design researchers have historically been involved in various types of research as part of design practice. Surveys, questionnaires, ethnographic research, field studies, focus groups, case studies, a/b testing are all examples of empirical research and data collection. We have also been producing design theory, and applying those theories to our practice and processes, though in a relatively unstructured manner. These methods are social science research, hence, as a social science and we should use what is learned from other forms of social science to improve research and scholarship in our field. We need not reinvent the wheel and redevelop what already exists.

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Designing desirable patient-facing healthcare tools

AARON GANCI
Healthcare, UX Design, Service Design, Product Design, Participatory Design

Technology has introduced many new possibilities in the realm of patient and caregiver-facing healthcare tools. Our ability to make more appropriate and desirable products and services in this space allows researchers to provide ways for people to enhance the way they manage their health, track symptoms, take medication, communicate with their provider, and generally improve their quality of life. In many ways, these advances allow researchers to return agency to patients and enable them to have a more active role in their care.

Doctors and nurses are naturally at the forefront of this research as they deal with patients or healthcare processes directly. They are able to easily identify the unmet needs of their patients. However, there is often a disconnect between what a provider thinks a patient needs and what they actually want. My research lives in this gap between a healthcare idea and solution. There are two distinct ways that my practice as a design researcher support this work. First, I embed myself and my students in the clinical research team to help understand and design the experience around the proposed technology, devices, or service. Second, I assist the development and engineering teams as they build software or technology-based solutions. This work often manifests as traditional UX and user interface design. These projects are especially fruitful for designers working in academia. They allow us to support our work with science and health funding, apply our skills to more complex problem spaces, and have impact for real patients.

In what ways can design strategies for advocacy translate into action as a means for human self-reflection?

ALBERTO RIGAU
Design Strategies, Advocacy, Self-Reflection

As far as I am aware, design and advocacy, when linked, are usually evaluated in relationship and/or contrast to civic actions, gestures or movements of a collective nature. Recent events, our interlinked digital lives, the contemporary political landscape, and our social/digital networked interactions, to name a few, validate my perception and foster this kind of evaluation. And yet, as our national social, political, and cultural ideals seem to shift and clash, how are designers crafting for the personal, private, introspected personas? Are we treating messages to produce a mass-like movements or meaningful cognitive reflections? Can we harness design strategies to advocate for self-realization? ...for individual, willful understanding? As the world keeps getting exponentially more uncertain, I am interested in ways the we, designers, can help individual evolve into a beyond resilient frame of mind that enhances personal curiosities, promotes collaboration and helps create a sense of community by increasing individual confidence.
Negotiating social memory through the design of museum experiences

ALLAN MARTELL
Experience design, social memory, museum exhibition, participatory design

My research explores how the design and production of a museum exhibition mediates the ways in which residents of a post-conflict community remember their past. Prior works in the field of social memory has suggested that design work is relevant to the creation of sites of memory, such as archives, monuments, and museum exhibits. However, these studies have primarily made allusions to the role of design while primarily focusing on other aspects related to the creation of sites of memory such as community organizing or fund raising. Therefore, researchers in social memory have yet to explore how public engagement in the design of sites of memory shapes public conceptions about the past. In order fill this gap, this study relies on ongoing efforts to design a museum exhibit with youth from a rural community in northeast El Salvador. This workshop is part of a hybrid study that combines museum experience design and ethnography to untangle the mediating role of memory in the production of memory.

Combining Design Practice, Education, and Research

ALLEN SAMUELS
Industrial Designer, Professor of Design, Design Education

In my career as an industrial Designer (IDSA), I have designed products for over 30 corporations for over 50 years, including Corning Glass Works, Bausch and Lomb, Black and Decker, Westinghouse, and 3M. My designs have included glassware, dinnerware, microscopes, medical and scientific instruments, public transportation, heavy industrial equipment, and furniture, and have won awards including the Reddot. My current design practice continues to push past existing technologies, and my current research is focused on creating products that deal with aging, poverty, the disabled and disaster relief.

My work as a designer went on concurrently with teaching and research in the UM Stamps School of Art and Design, and I served as Dean from 1993-1999. As a design educator, I have continually created innovative ways to engage students in conducting research on design problems. I emphasize hands-on experiences with design and the challenges of representing and developing ideas.

In my own work, I have defined design as a form of research that creates new knowledge in the world: “Industrial design is the professional service of creating and disseminating new knowledge through the creation of original designs aimed at optimizing the lives of individual users and advancing culture overall —they optimize the function, value and appreciation of products and systems ... clearly expressing purpose, place and value.” I look forward to our conversations on design education and research.
Basic Design Pedagogy Through Recognition of Cultural Design Identity

ANALEE PAZ
Cultural Design, Design Education, Authenticity and Inclusion

In support of the evolving role of design today and the unprecedented connection of a multicultural community, it is important to recognize the intersection between intrinsic cultural design elements and formal fundamental design studies. This thesis empowers knowledge of cultural identity through basic design pedagogy. It proposes education that supports learning formal elements of art and principles of design via indigenous design. This study serves as a specimen for investigating details of specific indigenous artisan creations. The concept was developed from observations of current art and design education, cultural identity and design inclusion, as well as established teaching theories that guide current pedagogical methods. The reflections considered through this research lead to the issue not solely of art and design, but of how to learn and teach art and design. By creating methodologies that organize this content, the discipline can have conscientious sources of information to begin with and build upon. Furthermore, it creates more well-rounded and knowledgeable interdisciplinary interests and empathy. This study acknowledges that art and design education and research should be geared towards addressing multicultural audiences with solutions that consider both the audience’s and their own cultural orientation.

The Design of the Protest

ANDREA CARDINAL
Protest, Action, Banners, Posters, Banner Library, Community, Organizing, Union

A Design allows for individuals to take ownership within a movement. I have recently completed a fellowship with my union, the Lecturer’s Employee Organization, (AFT Local 6244, AFL-CIO), where I engaged with fellow members to determine how the visuals which I designed and helped to physically print and paint, helped empower them in our most recent, successful, contract negotiation. This work extended through the summer of 2018 with a series of workshops engaging students at the University of Notre Dame to learn skills for designing and printing their own paper posters and fabric banners for a variety of movements which they self-identified as being a part. The skills included: authoritative typography, compelling graphics, cutting stencils, one-color screenprinting, and oversize banner making.

These workshops began in 2017 to support the work of Black for Palestine and it was the first time that I saw how my work was animated in the environment and how participants were eager to provide their own labor. I also observed how excited people were to activate the materials and how those designs organized us. This community sourced labor has provided upwards of 10 4’x8’ banners for our growing lending banner library, located at my studio, Talking Dolls, in Detroit, MI. Activists can borrow any of our banners for actions and return them when they are done. We have banners supporting water rights, family unification and re-unification, and the #metoo movement.
Continuing the Story: Practicing Narrative Theory in the Graphic Design Classroom

ANGELA DOW, SUSANA ENGBERS
Narrative, storytelling, interdisciplinary teaching, literary analysis, research dissemination, ad design, design research

The concepts of storytelling and narrative are common in the design profession, yet in the classroom, students are oftentimes instructed to “tell stories” in their design work without much guidance in effective narrative techniques.

As professors in the disciplines of English and Graphic Design, we saw this issue as an opportunity to conduct a study that would demonstrate the ways in which we could create practical connections between “academic” and “studio” work through a more nuanced understanding of narrative and an interdisciplinary teaching approach. We hypothesized that by bringing literary analysis into the design classroom, students might create more meaningful ads.

In our study, Susanna visited Angela’s Advertising Design class and conducted lessons that exposed students to specific stories, films, and ads, noting and analyzing the narrative techniques used across the genres. Students were then directed to apply these techniques to their ideation and design process and asked to reflect on the ways in which their exposure to narrative strategy had influenced their ads when presenting their final solutions.

This research has been presented to an audience of English faculty, as well as having been published online and exhibited in a faculty show. We are interested in continuing our investigation and engaging a wider variety of disciplines in both the process and the results. By participating in conversations related to the theme of “Disseminating Design Research,” we hope to share our experience and get some feedback on potential expansion and dissemination.

Design Research in the Architectural Practice

ANDREA HAYDON
Design Research, Architecture, Service Design

The AIGA 2025 trend “Bridging Physical and Digital Experiences” is incredibly important. How can we continue to push that not only are digital experiences important but physical experience as well? This is something we deal with every day at RATIO. How do we “sell” our ideas of a new space to our clients? Is it mixing VR/AR technology to real models? How do we know how they will react? Older generation versus younger generation? How can we teach our students leaving the university to collaborate with those who are technologically advanced when it comes to UX design, visual animation designers and coders?

Now as a Service Designer at our firm, understanding the underlying motivations and needs of both the “administrator” and “users” of a space and how the back end is operating, we can more deeply inform the physical design of the space. For example, at St. Louis University Library (Figure 1), we eliminated barriers between students and staff by creating concierge support with a Genius Bar-style service point we call “OPEN:re:SOURCE”. In this user-centric, tiered service environment, students are free to explore digital and collection-based resources, Academic Technology Services and traditional Library services with support from students and professional library staff. This leads to any traces of the traditional help desk formality being eliminated, breaking down the purely transactional relationship to create a “guide on the side” experience for students, while still making experts present and accessible when needed.
Visualization of the Space In-Between as a Means to Enhance Design Research Synthesis

ANN MCDONALD
Visualization as ‘Doing’, Design Research Synthesis, Boundary Objects, In-Between

What happens when we value the visualization of evolving relationships as a primary means of synthesis in the design research process? As visual communicators and researchers, we need to question, expand, and further develop the visualization methods that we currently use to synthesize within ‘Doing Design Research.’ What if we encourage and facilitate more open-ended processes that allow multiple means of participation in the space ‘in-between.’ By focusing attention on the ‘in-between’ we can more carefully examine the shifting relationships between diverse participants and ‘expert’ researchers, the time between the readily identified touchpoints that initially demand attention, and the space and exchanges between the many diverse roles that are part of a service or experience. In order to understand collectively and facilitate meaningful synthesis, we must move beyond templated, spreadsheet-framed alignment diagrams and journey maps and stop hiding behind walls of post-it notes.

As outlined in AIGA Designer 2025 required competencies, design students will need to meaningfully ‘identify and visually map the interdependent relationships among people, places, things, and activities in a complex system.’ The attention to developing richer and multiple means of visualizations of relationships at various scales and time intervals should be central to design education. The act of acknowledging and bringing to light hard-to-discern spaces ‘in-between’ can potentially help hold teams accountable to closely observe existing conditions and evaluate the consequences of design actions from more nuanced and varied perspectives.

Design Internships Re-Visited and Re-Created

ASHLEY LIPPARD
Internships, preparing designer for industry jobs, Design Internships, Experience based learning

Drawing on my experience as an overseer of design internships in the university context, as a mentor for design interns preparing for transition from the academy to the marketplace, and as a supervisor of design interns in the industry, I sense a need for an assessment of the relevancy of the traditional design internship. The purpose of this exercise is to create a career-shaping experience for today’s student.

The experience of an intern is invaluable from a real-life standpoint which is much more than simply the refinement of skills. Through observation and actual practice of client management, project conception, process definition, strategic operation, creative problem-solving, etc., tomorrow’s designer becomes better prepared to excel.

The experience of an employer is crucial as well. Likely the intern will not have the instincts and experience to handle all facets of a project. Helping employers to intentionally seize project based teaching methods will transform those moments into defining moments. In addition, the open-minded employer who gives his or her intern the opportunity to apply raw, developing talent can reap a return on investment. In other words, internships certainly have the potential to be “win-win-win” for the employer, student, and client.

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A review of the standard design internship is the starting point for developing more contextually-appropriate experiences for the student and employer. A well-crafted internship can ensure that the student experiences all the necessary components of the role demanded by the industry as well as desired by the academy preparing its students for their futures.
Functional Forms: Empowerment through design research

ASHLEY MOON
Empowerment, design, research, functional, form, government

Applying for public assistance can feel like a daunting task due to inefficient system processing and barriers to access applications that are required. It is essential that interdisciplinary design research seeks to achieve improved government service design and delivery to attain optimal user experiences, eliminate injustices, and demonstrate cost-effectiveness to taxpayers.

My undergraduate research thesis “Functional Forms” sought to accomplish this through ethnographic research to redesign public assistance forms. As technology evolves, design research in education allows educators, students, and practitioners the opportunity to explore new framework in analyzing and applying strategies to improve existing government programs’ design and delivery of public services.

It is evident that design research is fundamental in the pursuit of design education and other disciplines. Now is the time to engage in research with design education utilizing real-world scenarios and problem-solving.

From corporate-centered to human-centered: The steady rise of research in graphic design

AUDREY BENNET
Graphic Design Research, Human-Centered Design, Cross-Cultural Design

Whereas the work of graphic design practice has had a lucrative career adding value to large corporate brands that tend to exploit humanity for economic gain, the work of graphic design research has the potential to do the opposite—engender economic agency in global communities, particularly those underserved. Graphic design, as an act of research, can fully realize its humanitarian potential, when it works with underserved communities on addressing socio-economic challenges. However, to do so requires input from a culturally diverse team of stakeholders that likely will include experts from different disciplines who have varied research methods and agendas. How do graphic designers engage in human-centered design research? What expertise do they bring to the collaboration? Within the partnership, how do they negotiate non-service roles? How do they lead interdisciplinary research teams and engage with underserved communities? How do they seek funding for multidisciplinary research? What new knowledge (if any) do graphic designers need to participate in human-centered design research? How do graphic designers make a living conducting human-centered design research? These are a few of the many questions that need to be addressed as graphic design evolves from a practice for-hire to a self-sustaining discipline.
Using Conceptual Frameworks Toward Design Investigation into Online Communities

BREE MCMAHON

When designing for communities, particularly virtual communities with multiple participants, designers have a role to play in “raising or widening the circle of participation” to foster membership growth [Putnam, 2001]. Often this occurs through conversation, which also encourages membership solidarity [Anderson, 2006]. Designers are responsible for both anticipating the needs of unique users and their groupings, and recognizing the needs of entire formed communities. My investigation led to several theoretical frameworks exploring the implications of various designed tools used by online community members. These frameworks serve as a guide for making new “things,” and also to better evaluate “things” already made. To that end, I devised a conceptual framework to further questions the diverse needs of individual participants and the community as a whole. Specifically, I combined several theories into a conceptual theoretical matrix to understand the multiple factors that affect users and their specific needs. In order to investigate further the nature of unpredictable online community members, I consulted the works of Elizabeth Tunstall, Etienne Wenger, Nancy White and John D. Smith. Their theories address different facets of communities. While Tunstall identifies five aspects—or dimensions—through which users internally experience their communities, Wenger, White, and Smith posit nine orientations representing standard patterns of community activity. I used this research to inform a new framework that defines the needs of users and communities while further examining the relationships between various community activities and internal experiences.

Re-examining the Thesis Project in a New Era of Design Research

BRUCE HANINGTON
Graduate, Masters, Thesis, project

The thesis, or thesis project, is a cornerstone of many masters’ programs in design. The range of theses supported across various design schools includes traditional explorations in “design studies” or research of design; human-centered design projects constituted of research for design; and, more recently, research through design, recognizing the value of making as a valid form of research exploration, particularly when developed as reflective practice. The benefits of a thesis include the tangible demonstration of mastery over design subject matter, the ability to craft and self-manage an independent design project while working with a mentor-advisor, gaining hands-on research experience, and creating a portfolio piece. However, in the shifting landscape of design, questions arise. Are schools maintaining outdated models of thesis preparation, conduct, and advising? Do thesis projects crafted as independent studies contradict experience for a field that is largely based on team collaboration? Do subject areas such as design for service or social innovation require a different model than traditional design explorations? Does the introduction of research-through-design require new forms of thesis documentation, exhibition, and archiving? These questions suggest that it is timely to examine how we support new models of design research within thesis projects, and how a diversity of models might be guided and evaluated in parallel, even within the same school. A reexamination of the thesis experience is critical for the success of our students and schools, if we are to continue offering a beneficial educational experience while also meeting the needs of employment and design practice.
The Genre of the Document as a Tool for Unpacking Graphic Design’s Relationship to Systems of Authority (or, The Banality of Excel)

CHRISTOPHER LEE
Documents, Evidence, Authority, Historiography, Bureaucracy

In her book “Paper Knowledge: Towards a Media History of the Document.” Lisa Gitelman argues that “…the document triangulates the relationship between the individual and authority.” Johanna Drucker, in her book “Graphesis: Visual Forms of Knowledge Production,” contends that “…visualizations are forms of argumentation.” My contribution to Decipher would be based on an adaptation and synthesis of the above, with the following formulation: “Documents are forms of argumentation that interpellate (Althusser) individual and collective subjects in relation to authority.”

I wish to add to the scope of AIGA 2025’s principle of “Complexity,” and suggest that the genre of the document be proactively included and questioned through the disciplinary and pedagogical lens of graphic design. For instance, what would it mean to teach documents (i.e. tax forms, money, passports, etc.) in a design studio course? What historiographical shifts does this suggest? What theoretical concepts need to be revised, introduced, or abandoned?

Highlighted this banal category (Foucault, Latour) of design opens a way to charge, consider, and make/research, towards unpacking the ways that graphic design can be entangled with forms of power that range from the administrative/bureaucratic (Anderson, Scott) to the networked (Singh Grewal). My research the ways in which documents are designed to remember—tell stories, archive, be evidence. It asks how historiography might be considered a form of design (Lee, Stevenson). It explores how graphic design can map the relationship between subjects and the authority(ies) by which they are interpellated, towards cultivating a method for mapping the political and ethical topology of complex social systems.

REFERENCES
Experiential Typography

CHAD REICHERT
Typography, motion, branding systems, type design

The future of typographic development will be defined by human interaction, non-conventional ideas of legibility, and how it functions to give more meaning and depth to linguistic messages.

The Science of Design Science

COLLEEN SEIFERT
Cognition, science, psychology

In an interdisciplinary project involving industrial design, mechanical engineering, and psychology, our research team has investigated how product designers create multiple concepts in the early stages of design. We gathered evidence in four empirical studies of design processes and outcomes, including award-winning products, multiple concepts by an experienced industrial designer, and concept sets from 48 industrial and engineering designers for a single design problem. This compilation of over 3450 design process outcomes was analyzed to extract concept variations. The resulting set of patterns, in the form of 77 Design Heuristics, catalog how designers appear to introduce intentional variation into conceptual product designs. These heuristics provide ‘cognitive shortcuts’ that can help designers generate more, and more varied, candidate concepts to consider in the early phases of design. (Yilmaz et al. 2016 Design Studies). With Professor Shanna Daly in Mechanical Engineering and Prof. Aileen Huang-Saad in Biomedical Engineering, we have extended this approach to the empirical study of design and designers in diverse fields. My research program grew from a collaboration with a graduate student, Seda Yilmaz, in the Design Science Program here at Michigan, an interdisciplinary Ph.D. program connecting diverse areas of design science on campus. As the current director of this program, I look forward to making more connections in design research!
Does the Digital Medium Discourage Student Ideation and Refinement of Projects?

DAVID SMITH
Digital, Process, Student

The creative process can be broken down into different methodologies and steps. One common breakdown would be as follows: Research > Idea Generation > Refinement > Final Product. In an effort to get the job done, a visual arts student may short-change one or more of these steps. As educators, we try to teach our students to make the most of each step so that a project’s full potential is realized.

For the visual arts student, one very important method for generating ideas, as well as refining ideas, is sketching. When working in a traditional medium, one that is executed by hand, sketching by hand seems to be a natural extension. In contrast, when working in a digital medium, one where the computer assists in the execution of the work, sketching may seem out of place. Students already reluctant to give proper time to exploring through sketching with a “hand” medium, are even more so when working in a digital medium. The fact that elements generated on a computer are usually more easily edited than traditionally created work, and that elements generated on a computer can be more easily be precise may contribute to this problem.

The reality is that digital tools are not necessarily easier or faster, and they certainly won’t generate ideas on their own. My argument is that the digital tools are just that—tools. The head directs the hand, and the hand directs the tool. Part of the tension between hand and digital is the tendency of students to skip developmental steps in the creative process when using digital tools.

Education in Reverse or Fast Forward

DOUG KISOR
Eurocentric, Mediumlessness, mutable, systems, subjectivity, empathy, intent

A fair portion of design education is rooted in a twentieth-century Eurocentric model of form giving. As McLuhan states, “We look at the present through a rear-view mirror.” The palette of the communication designer has grown exponentially. Previously anchored in a text, symbols, images, and formats, the current state of information is “Mediumlessness.” A message beginning in one state easily transforms to sound, motion, proximity, data visualization, haptic feedback, user’s channels, etc.

How do we structure a design education model that embraces the existing reality of messaging? Adding AI to the mix the, the initial message is subject to shifting hierarchies and cultural translation potentially removed from the initial intention of the designer/author. Geography is removed with the instantaneous dissemination of content. Any ridged educational model of organizing information is inherently doomed in our current information reality.

At the ground level, a communication designer should understand the systemic interrelationship of communication channels. Understanding that every gesture has meaning and the meaning is mutable within our current information model requires a reconsideration of the foundational knowledge required to be an effective and ethical communication designer.

The traditional communication design educational model generally begins with simple methods of organizing information, ie. a typography course. Is a more complex model of foundational learning more appropriate to the current conditions within which design functions? The form is inherently linked with meaning. Should those initial experiences be linked to subjectivity analysis, sentiment analysis, systems thinking?

It appears research, form, systems, empathy, and intent should be formulated as co-educational occurrences. How do we restructure the model?
Learning about design research by doing design research

ELIZABETH SANDERS
Co-design, mindset, constructivism, transdisciplinary, future

Students today need to learn how to design for people as well as how to design with people.

Design research will play an increasingly important role in both of these approaches but the role of the designer/design researcher will differ between the approaches.

The difference between designing with and for people cannot be found in the methods and tools because these are drawn from the same toolbox. The difference is in the mindset that one holds about the role of people in the design process. In the traditional process of designing for people, the methods and tools are in the hands of the designers/design researchers. In co-designing, the designers must relinquish control of the creative process and put the methods and tools into the hands of the people who will be served by design.

In the traditional process of designing for people, the focus is usually on commercial applications. In the co-design process, the focus is more likely to be on complex social challenges.

We will need traditional designers as well as co-design facilitators to meet the challenges of the future. As educators, we must ensure that our students are well prepared to be able to decide which mindset and approach makes the most sense for them. A constructivist perspective toward learning where educators offer hands-on, transdisciplinary learning experiences will work for both approaches. Students and educators will learn together through exploration, experimentation and projects that take place in the real world.

Re-evaluating the Future of Trend Forecasting in Pedagogy and Practice

EMILY FLANNERY
Trend, forecasting, speculation, analysis

Trend research has been traditionally used to inspire design novelty and advance aesthetic execution. Despite an intrinsic connection to the design process, as a practice Trend Forecasting is challenged as being “too fuzzy” or not easily translated to an array of product, service, or experience applications. Concurrently, a tidal wave of DIY trend spotters has risen from the convergence of clout-centric social networks and the democratization of design. Everyone with an internet connection can now feel capable of approximating the next “big” design movement or cultural trend, leaving the profession and practice of Trend Forecasting at a crossroads.

Research indicates an emerging shift from mainstream trend reporting toward “Predictive Innovation” practices; from passive futures thinking, to active futures doing. This shift segments the forecasting profession into three futures zones: analytics, forecasting, and speculation.

To adequately prepare students for the future of trend forecasting, as design educators, we must adapt and address the different trend translation methods inherent in each of these zones. The goal of the on-going research is to prototype and test solutions that address this shift within each of the zones. Specifically, “forecast as decision-making tool” for near-term design interventions and “forecasts as cultural artifact” which manifests a path toward a desired future-state. Codification of these prototypes aims is to better prepare young designers at the University of Cincinnati, College of Design, Architecture, Art and Planning, Myron E. Ullman Jr. School of Design for participation in, and as future leaders of, the creative industry.
Role of design research methods in revival and preservation of Indian crafts

GOWRI BALASUBRAMANIAM
Craft Documentation, Preservation, Design intervention

Craft practices in India and surrounding regions exhibit distinct geographical and socio-cultural characterizations of the region. These craft practices often reveal valuable cultural notions and meaning beyond their primary purpose of adornment and artistic representation. Historically, crafts were conceived and manufactured by local craftspeople within their communities. However, with growth in technology, communication and shrinking boundaries of the world, there has been an increased demand for innovative materials and methods with current measures of quality and perfection. Due to changes in these social, political and economic structures the crafts community is increasingly vulnerable to disrupted realities and potential extinction. Though the strengths of these crafts are being recognized both globally and domestically, the qualitative exchange between the urban market-place and the craftspersons is non-existent.

Design methods and research play an instrumental part in facilitating the crafts community and initiating the dialogue between designers and craftspeople for a mutually beneficial exchange of expertise. Knowledge empowerment and creation of efficient multidisciplinary networks between the community and designers can bring a cutting-edge advantage to Indian crafts. Knowledge can only be empowered when documented. Indian handicrafts and its wisdom have been transferred within families from generation to generation, remaining virtually undocumented. Further, millions of Indians still depend on native methods of making, indigenous skills and techniques to make a living based on handcrafted products. As a designer in India having access to this cultural wealth, it is vital to research and document, and intervene respecting these cultural barriers.

Inspired by this line of thought I undertook a craft documentation in the Kathmandu valley, Nepal. The study aimed to document the traditional attire of the Newars (indigenous people of the region), to observe their practices from a designer’s lens to map possible areas of intervention and methods of preservation. It provides valuable insight into the craft person’s dexterity in handling raw materials and their skills to combine utility and beauty. Documenting this traditional wisdom in its purest form was crucial. Methods of immersive qualitative research allowed experiencing the craft in the making in its actual environment. The experience of carrying out this research allowed concluding and confirming that though the quality of production, identification of market gaps and understanding changing audiences help set the foundation for the growth of the Indian craft sector, design documentation and research play a vital role in the protection of traditional wisdom and craft practices.
Design Education: Adding Narrative in an Intentional Way

EVA ROBERTS
Narrative, Story, Education

Recently, I had the opportunity to spend time considering the role of narrative within design education; this investigation represents a new direction in my interests. As a design educator, I have been struck by the struggle that students have in bringing concepts to life and moving beyond dry reporting. While narrative may seem accepted as a self-evident component of design and by extension, of design education, there seems to have been little attention paid to narrative or storytelling design education. More recently, as “graphic design” has come to encompass UI / UX and Experience Design generally, the concepts of persona and scenarios have become more commonplace within design education, but these are framed in a somewhat formulaic manner. We now have the welcomed addition of Ellen Lupton’s book, Design is Storytelling, but this too frames narrative primarily as personas and scenarios. It is my belief that paying more direct attention to storytelling activities in the design classroom will enable young designers to have a more empathic and robust appreciation of their personas, the characters of their scenarios, which are a story. My step into this area is a small one at this point. While at the University of Sussex, I had the opportunity to work with Dr. Pollie Barden to develop and conduct workshops attended by faculty across a wide range of disciplines. Our goal was to test some activities on these educators and assess whether these seemed of potential value to their classroom. Much remains to be done.

Collaboration / co-design

HANNAH SMOTRICH
Collaboration, co-design, visual communication design

Much of my teaching and design research is centered on collaboration, and ways to engage diverse participants in co-design processes. As a visual communication designer, I am particularly interested in the role that designers can play in making the tacit explicit and developing ways to help communities, individuals, and marginalized populations surface and move their interests forward.

This semester, my “Doing” and “Teaching” take the form of two project-based, collaborative classes.

The first, Detroit Neighborhood Entrepreneurs Project, is a reciprocal learning initiative and collaboration among the Stamps School of Art and Design, the Ross School of Business, the Law School, and the Ford School of Public Policy. Minority entrepreneurs in Detroit’s low-income neighborhoods allow University of Michigan faculty and students access to the inner workings of their businesses in exchange for integrated, pro bono design, legal, accounting, analytic and business services. Our experience to date is that the research-supported advice that students and faculty offer substantially changes how entrepreneurs operate, which leads to overall improved operations, customer engagement, profitability, and community development impact. In addition to the learning experience of their multidisciplinary teams, students emerge with a more nuanced understanding of the systemic barriers minority entrepreneurs face, the difficulties of launching and operating businesses in economically challenging environments in Detroit, and experience in working with entrepreneurs directly to help overcome those barriers.

The second, Voting is Sexy, co-taught with my Stamps colleague Stephanie Rowden, is a collaborative class in which students are creating “a high-energy, non-partisan campaign to make voting irresistible” to their peers. Starting from a foundation of behavioral insights, students are producing a range of entertaining, educational and engaging projects — from installations to short videos to pop-up events. The class is part of larger university and national efforts to increase voter participation. We hope students emerge with a greater sense of civic agency and understanding of the contributions that artists and designers are poised to make.
What is Arts Research?

GABRIEL HARP
Research, knowledge production, categorization, ontological reasoning, higher education, organizational change

The practical goal and task of my current work is to share a ground-up set of perspectives on arts-and-design-driven research that can help in communicating the many facets and cultural frames in common use. These perspectives and topics were synthesized from over 600 interviews with faculty, staff, and academic leadership from over 38 institutions of higher education. The definitions and descriptions that emerge provide practical insight for articulating everything from job descriptions to economic policy, as well as tenure and promotion criteria, grant programs, and even the mission descriptions of institutions themselves. The main task of this work is not to get the right answer; rather, it is to untangle and see the multiple paths and branches for their material and metaphysical commitments, how they are practiced, and what they mean as outcomes and experiences. In the context of research universities, the work here does not seek to describe an authoritative definition for arts (or design) research that can encompass all creative and scholarly pursuits. Nor does this project seek to advance a scholarly review of the subject. Instead, this work seeks to add to our understanding of how diverse faculty, administrators, and students view research involving the arts and design within the institutional context of research universities.

Leveraging Machine Learning to Develop User-Centered Inclusive Design Methods

HELEN ARMSTRONG
Machine Learning, Accessible, Inclusive, User-centered Design, Disability

Our lives fluctuate along a spectrum of impairment. Impairments might be permanent, temporary, or situational. Lennard J. Davis notes in Bending Over Backwards, “Impairment is the rule, and normalcy is the fantasy” [1]. Design consultant Graham Pullin suggests a similar idea in reference to the concept of disability: the boundaries between disability and ability are unstable, changing depending upon environment, activities, or even states of mind [2]. A user-centered design approach that focuses not just on lowering barriers to access, but also upon improving the overall user experience, asks designers to question binary conceptions of ability and disability. Once designers begin to understand ability as a fluid state, they can utilize user-centered design methods to map out a spectrum of impairment for specific users. This deeper understanding of the variability of impairment supports the need for interventions through which technology can sense and respond uniquely to each user. One emerging technology—machine learning (ML)—is particularly adept at learning and responding to individuals. ML enables a computer to sense and analyze the world—and human users—more like a human does. Using ML a computer can engage with unstructured data—images, language, videos—interpret that data, and then predict outcomes. How might we leverage this new technology to open up possibilities not only for responsive and inclusive interface design but also responsive and inclusive user-centered design methods? How can we use ML to develop innovative research methods that meet our changing understanding of disability?

Resources for Design Research Educators

JAMIE VANDER BROEK
Library, Research, Support

I have been the Librarian for Art & Design for almost four years. In that time, the school I serve has become increasingly design focused, hiring three new cohorts of design educators. Our Library has traditionally supported the contemporary art and making activities of the school well. I am interested in learning more about design research education so that I can better provide support, collections, and tools for students and faculty.

Overcoming the Rustbelt Stigma: Teaching Creative Placemaking in Design Education

JENN STUCKER
Scholarship, Engagement, Placemaking

In the mode of Scholarship of Engagement my creative collaborative work is committed to fostering the growth of the community and promoting positivity in the public about the Northwest Ohio region. This follows BGSU’s commitment to Scholarship of Engagement, “...a method of engagement that addresses critical concerns, uses the expertise and insights of scholarship to help solve pressing public problems, and contributes to the public good. It does so in true collaboration with community...” In such work the designer and community work together, and the impact of such projects is measured by recognition both in the field and the community. My approach to graphic design’s role in building and transforming community identity is corroborated in books like “Just Design: Socially Conscious Design for Critical Causes” by Christopher Simmons, “Designing for Social Change” by Andrew Shea and “Developing Citizen Designers” by Elizabeth Resnick. Some ways in which I have contributed to Scholarship of Engagement is through forming a participatory design workshop, creatively directing projects through AIGA Toledo, and authoring and producing large-scale creative placemaking projects. The architecture in creating these type projects are shared with to students as classroom models to reveal and empower them in creating and authoring their own community-based work for the public good.
Destination Pt. Defiance: Waterfront Phase 1 Advocating for design research methods for better a better public realm

JENNIFER LOW
Public realm, defining design research, environment, design leadership

Design in the public realm demands a highly collaborative, design research-based process to ensure the successful execution of work that aims to improve the quality of life for its communities. Designers of the built environment leverage design research methods that provide critical leadership to navigate projects that require thorough coordination, responsiveness, and consensus building with the client, consultant teams, community, municipal agencies, and other stakeholders.

Pt. Defiance Park is a 760-acre large urban park located 40 miles south of Seattle on Puget Sound. At its south end is a 20-acre peninsula formed from black slag, a bi-product of a copper smelter facility. For over 100 years the Asarco Company dumped slag here. The slag caused lead and arsenic contamination in the air, water, and for decades beyond the facility’s closing in 1985. Shortly thereafter, Washington State reached a settlement with the Asarco Company to pay for the site’s environmental remediation. The city leveraged this clean-up to reclaim this piece of land as a public park.

This 20-acre peninsula is now undergoing a transformation as a waterfront remediation and park project. As a lead designer on this project, I was able to apply and observe the application of designer skill-sets such as creative problem-solving, comfort with iteration and non-linear thinking, and observation as critical practices in the successful navigation of projects of this scale and complexity from design development through construction.

The landscape architecture design team continues to lead the reclamation, remediation, and transformation of the 20-acre Superfund site into a public park. The new park will provide connection to the Commencement Bay waterfront through a network of pedestrian trails, a new 625-foot long pedestrian bridge, and 20 acres of recreational open space to this previously inaccessible part of the city. Construction is slated for completion by the end of this year.
Defining and Teaching Design Research to Undergraduate Students

JILL GREENE
Design, research, lived experience, framework, human-centered

Teaching design research at the undergraduate level is challenging. These young students, in many cases have limited lived experience. They lack the ability to be open-minded and resourceful in their investigations, their explorations. They are quick to settle on that one right solution. Not to mention lacking a meaningful understanding of their audience.

In the classroom students often don’t know each other’s names even by the end of the semester, let alone anything about themselves because they assume they all have similar experiences. I find it difficult to encourage students to have meaningful conversations, to get to know one another, to explore their community, and be insightful when we are afraid to disagree or offend. This carries over to their research as well as critiques where students are afraid to ask questions and “like” everything for fear of hurting someone’s feelings.

I look for ways for students to engage with one another, to explore beyond their own experience, and to really explore the community in which they operate, even if it is uncomfortable. I try to continually develops and provide a framework for human-centered design that promotes not only quantitative, but qualitative research, both breadth and depth, to be insightful and consider the diverse contexts of their work, to define and understand their audience, as well as the impact design can have on that audience.

John Marshall, PhD

JOHN MARSHALL
tangible interaction, cross-disciplinary collaboration, problem-based learning

I am a designer, educator, and creative technologist with over 20 years’ experience. I am interested in the new ecologies created by the intersection of objects, tangible interaction, and networks. As co-director of rootoftwo, LLC I have worked with clients, collaborators, and institutions to present work in Australia, Austria, Brazil, China, Denmark, Finland, France, Japan, Macedonia, the Netherlands, Norway, Spain, Sweden, Turkey, the United Kingdom, and the United States. Recent projects have been featured in Wired, FastCompany, Dezeen, Dwell, Studio International, and The Guardian. We were selected to represent Detroit UNESCO City of Design at the 11th Annual Meeting of the UNESCO Creative Cities Network. We are currently working on a proposal to develop an urban and landscape design strategy and cultural center connection framework for the Detroit Institute of Arts and over a dozen neighboring institutions. As an educator at University of Michigan, I am pursuing new educational models, technologies and tools for teaching and learning. My previous research has focused on how pedagogies that lie at the core of studio-based design education can enhance student learning in engineering. Previous studies have contributed a rubric for measuring students’ development of increasingly refined epistemological understanding in regards to wickedly complex and ill-defined design problems.
Teaching Design for Social Good

JORDAN BECK
Design Education, Social Good, Theory and Practice

Design educators face a number of challenges in their work. They have to keep pace with increasingly rapid, changing needs in industry to ensure that students possess the required knowledge and skills for success in internships and entry-level positions. Design educators also function as crucial nodes connecting design theory and (future) design practitioners. This is in itself a significant undertaking as research output increases year-over-year and shows no signs of slowing. In addition to these tasks, in recent years, a set of questions has emerged for us, practicing design educators, emphasizing concerns that may tend to occupy the periphery. They include: How do we train the next generation of radical thinkers? How do we engage with politically or socially charged topics relevant to the design community? How can we teach students to recognize inequalities built into the systems that we use every day? These questions can usefully be framed with the broader question, How can we teach students to design for social good? Drawing upon our own experiences as design educators for whom social good is a key feature of the studio, we discuss the challenges that we have experienced both in the studio (e.g. students’ responses to divisive topics such gun control or freedom of speech) and at the level of the institution (e.g. being encouraged to ‘water down’ design prompts). We discuss potential best practices and share failures, and we call for more design educators and researchers to engage with the question of teaching design for social good.

Defining and Assessing Collaborative, Practice-based Research in Visual Communication Design

JULIE SPIVEY
Multidisciplinary, applied, practice, collaboration, public, assessment

I have expanded the focus of my creative/research in recent years by engaging with multi-disciplinary teams in collaborative projects that allow me to use design to communicate complex ideas, visualize information and data, and advocate for users and readers. The core of this work addresses critical issues relevant to sustainability, and environmental and climate concerns. My practice-based research endeavors to bring clarity to information in a time of prolific data and messaging.

Design practitioner/academics are increasingly participating in collaborative, public, community-engaged or people-centered work with multidisciplinary teams or public partners to address problems, co-produce new knowledge, increase understanding of complex topics, and create outcomes that have positive impact. But defining and assessing this type of applied research as research (that is valid and meritorious) within the culture of academe can be challenging, as institutions require evidence of acceptance by disciplinary peers and/or “validation of quality” when often the very value of the work may be in its meaningful use (plus the contribution of further expanding the understanding of design within the institution and community, ultimately elevating the discipline). Design facilitation, service design and participatory approaches place users and partners in the role of contributors and co-creators, and outcomes may not be objects but systems or experiences.

As both a practitioner and external reviewer of such applied research or practice-as-research, I am interested in best practices for institutional support, assessment, and peer-review of such scholarship.
Building T-shaped competencies: Cross-disciplinary learning in undergraduate graphic design education

KARIN JAGER
T-shape, graphic design education, design thinking, undergraduate, cross-disciplinary

Many graphic designers today work in businesses and organizations where design is not a core service, and more than half of those employed in the creative industry are engaged in freelance work in addition to their primary employment. This shifting workplace challenges design educators to create a learning experience that prepares students to be cross-disciplinary, adaptable and flexible. Essentially building “T-shaped” skills – giving students a solid foundation in professional practice and the ability to collaborate, and apply integrated design knowledge. How can undergraduate design educators work collaboratively with other disciplines to meet this challenge?

Justice in non-linearity in design and information sciences

LAUREN BERIONT
Non-linear, Teaching, Engaged learning, Complexity, Equity

I am not a linear thinker. To me, the world is an emerging and interconnected jungle where one must design understanding that changes and complexities that are inherent in the world. In my work around design in community organizing, coalition building, community-university partnerships, and now teaching and coaching undergraduate and graduate students about design and information sciences, I am living in the tension between linearity and nonlinearity. How can we teach students a straightforward path to design while maintaining the iteration in the design problems to appropriately work on complex social problems? How can we design a simple technological interface for clients and customers with a sophisticated backend? I work on trying to extend this idea of complexity not just to the project process but to the partnership relationships through a firm foundation in justice. In our teams we think about the social identities of our team members, and the identities of the users of our designs. We reflect deeply on the ways in which our team culture and practices of management and communication foster or impede on inclusivity. We forecast potential consequences and benefits of our designs to different individuals, organizations, and communities. I’m excited to continue to explore with colleagues the ways in which we define design research, who we define our research with, how we design, and how we teach design research impacts the effectiveness and impact of our research and work. Peers regarding their own pedagogical approaches to enhancing community through aesthetic innovation.
Feedback Loop: From the Classroom to Industry to the Classroom

LILIAN CRUM
graphic design, brand design, community design, business, entrepreneurship, economic development

Not only might there be a disconnect between theory and practice in design-related curricula, but studio courses do not always teach future-looking industry practices. Several sessions of AIGA’s 2017 annual conference focused on “AIGA Designer 2025,” which examined the ways in which design educators can more effectively prepare students for a shifting professional landscape. Prompted by similar questions about the future of design professions within the knowledge economy paradigm shift, I initiated an applied research project, Woodward & Willis, in early 2017. W&W is a student-run, faculty-directed design firm that operates as a real-world studio outside of the classroom. The studio provides local socially-conscious businesses and organizations in the Detroit region with professional design services. This interdisciplinary team of students provides support for non-profits and local businesses in their infancy, presenting coalesced business and designed collateral. Building on Lawrence Technological University’s motto of “Theory and Practice,” students develop deeper conceptual understanding of providing real-world professional services while operating the studio and practicing their design skills. Questions of human-centered design, team dynamics, mentorship, technology, ethics, and social, cultural and economic impact underlie our project work. Ultimately, W&W intends to generate knowledge and experiences that allow students to become professionally and creatively nimble, independent and accountable, and able to adapt to an ever-changing design field. W&W also generates a feedback loop about such competencies between the classroom and the professional world.

Growing Interest in Design Methods

MAGGIE STEELE
Sustainability, collaboration, process, stakeholders, research

My interest in design research blossomed during the pursuit of my undergraduate degree at the University of Michigan where I was a member of BLUElab, an organization focused on sustainable human centered design.

During my time with BLUElab I lead Woven Wind, a team that built wind turbines for educational use, and later joined the executive board. Throughout my time with the organization I learned valuable design skills about ethnographic research, defining user requirements, concept generation, and prototyping. I saw that the most important part of design was developing an understanding of your end user and communicating appropriately with stakeholders throughout the process. I was also able to work on building the design methods skillset of members through improving the recruitment and member development process.

Professionally I took a different path, applying my industrial engineering knowledge to roles in supply chain and manufacturing engineering. While in process engineering at General Motors I was able to see the negative effects of lack of end user feedback, in this case from plant workers. The process group often failed to comprehend how the assumptions they apply may not reflect reality. There is little opportunity for interaction with users and even with a human-centered design approach in use, it is difficult to challenge the prevailing mindset. This drastically undermines ability to serve customers.

In my career I hope to combat issues such as that and advocate for end users through utilizing appropriate design methods and effectively sharing with stakeholders.
Resistance as existing the Gaps

MASIMBA HWATI
Resistance, Feint, Malicia, Dance, Movement

Mbende/ Jerusarema

In conventional dance attention is usually fixed on either the technical movement of the body or the music and sometimes we look at how the body moves to/with the rhythm of the music. However most dances dealing with resistance appear more complex and usually extend beyond the entertainment realm into that of feint and malicia.

Observing Jit and Mbende dances in my current project I noticed how the movement is not entirely in sync with the beat sometimes the movement is faster or slower than the beat there seems to be another space within the whole process that is neither music nor movement. what is this space?, this gap ?, what does it hold? .In Mbende/ Jerusarema you see similar phenomena at play ,where gestures are located in between beats there are designed to exist in the gaps ,why is this? The real dance exists in the craft of negotiating between the music and the movement creating a new space in which the ‘dance’ (the essence and meaning of movement) can exist. This ephemeral space exists to show several things ;first that the music and the movement are more of pillars that creating the framework in which the essence and the message of the movement (that is dance) may potentially exist. The dance is the epiphenomenal quality that is located in between the music and the movement. In my current work I introduce sculpture as another pillar in addition to music and movement. Similar to the distillation process that separates different components making up a substance ,the dance process in this context exists respectively in alchemical function. In context of dances of ‘Resistance’, the intangible scientific and political material that exists among the movement the music and sometimes the sculpture is the elixir that we call dance. The body being a repository of memory, history, culture and various socio-political aspirations usually finds a site of negotiation in dance, enabling it to aestheticize the complex information stored in it. This somatic Archive usually makes use of the ephemeral gap between the movement and the music to create what could become dance ,this form goes beyond entertainment and lands somewhere in between strategy and therapy. Kodwo Eshun says “Humans are entire Galaxies of processes” sometimes we attain glimpses of these processes in the site of ‘Dance’.

Zora Neale Thurston says of African American Dance “Nomater how violent it looks it always seems to suggest that it can do more”. Master Loka ,a Brazilian Capoeirista says “Capoeira is a dance where the fighting is always lingering in the background”, similar to Mbende/Jerusarema Capoeira was criminalized by the Portuguese colonial government in Brazil many times this portent martial Arts and revolutionary tool would be presented as mere dance in the face of the colonizer like most dance forms of resistance the essence of the dance in capoeira exist in between from music from the ‘Berimbau’ and the martial arts like movement.

There are aestheticized arsenals and euphemized lexicons of warfare and strategy packaged within most of oppressed or colonized peoples’ dances ,which could be described as nascent indicators in intentional revolt and struggle. Capoeira for instance especially Capoeira Angola ,looks like entertainment but is actually a site of euphemized revolutionary processes expressed by the body with several shades of subtle and aestheticized warfare towards a dominant aggressor. In colonial Brazil, capoeira was seen as a threat to the plantation system, because of this its teaching was banned. As a result, capoeira was put to music and disguised as a dance. The military and revolutionary underbelly of this type of dance is also evidenced by the criminalization of Mbende/Jerusarema in 1910 in Rhodesia. Most colonial governments are quick to sensor what they deem violent or sexual elements of culture especially in dance this attempted sanitization and cultural curatorship is based on the discomfort caused by. Most of these dances to the colonial and oppressive regimes.
Memory and Oblivion

MARIANETTA PORTER, DEBORAH LABELLE
African American, Slavery, History

My creative pursuits are intellectually supported through the study of black Atlantic history and its influence on contemporary artistic practice and dialogue. This study focuses on the iniquities, struggles and resistances of the black Diaspora and intends to reposition these concerns within present cultural and artistic debates.

Through the efficacy of language, texts and visual interpretations, my ongoing research project, Memory and Oblivion, chronicles the journey of slavery and seeks to recover the historical import of these passages, returning them to our social memory and conscience. Research for the project draws from an array of subject matter: narrative accounts such as oral histories, literature and folklore, historic documents, maps, archeological findings as well as visual artifacts and imagery in the fields of sculpture, painting, photography and the graphic arts. Utilizing sculpture and multi-media constructions, my artwork abstractly and metaphorically interprets this history and reflects upon the contemporary experiences that have grown out of it.

The seeds of my work within the university environment have found fertile ground for the cultivation of new ideas and approaches in examining the rumblings of myth and memory that constitute America’s troubled past. I strive through my engagement with other artists and scholars, to contribute to the critical discourse surrounding African American artistic practice, history and cultural enterprise and to increase public awareness and understanding of the rich cultural contributions that African Americans have added to the framework of American history and pluralism.

Building Trust in Legacy Institutions with Digital Experience Design

MEGAN FREUND

The goal of my current work is to transform preconceived notions of traditional educational institutions through digital experience design. Considered digital experiences are a hallmark of the tech industry. Market share is primarily driven by the ease with which products and services are discovered, purchased and delivered to customers. As service expectations rise, consumers instill trust in organizations offering superior service experiences. So what might design educators learn from tech’s example? A thoughtfully designed digital experience has the potential to profoundly impact student behavior.

A project I recently completed in the culinary education space brought a suite of digital features to an industry largely overlooked by technological innovation. This particular institute lacked a digital interface for student interaction and relied on manual processes for enrollment and record keeping. I reimagined the service experience by installing a digital “introduction” into the student journey. This experiential component bridged the discovery and purchase phases. It comprised of user account tools for carrying out basic support functions, a companion mobile site and clear points of entry for various student audiences to accomplish goals. This resulted in increased student enrollment, improved educational outcomes and increased confidence in the institution.

As digital natives constitute a larger portion of the student population, it’s critical that educational institutions recognize the influence of designed digital experience in garnering student fidelity.
Adaptive AI-driven design: the rebirth of design hacking

MEIRA CHEFITZ
AI-driven design, decision making, adaptive products

When users repurpose a design artifact, they add functions to a design. In turn, a designer may update a design to accommodate the repurposing. Think Ikea hacks. A modular design remains the same throughout the seasons, but a cabinet can become a litter box and a shelf can become a bike rack. Alternatively, a designer may choose to redesign to limit the repurposing. Public benches with guard rails or inclined seats are a deliberate attempt to disallow repurposing of a bench into a cot—or merely an extended stay.

I’m interested in the application of these decisions when designing AI-driven products. Artificial intelligence can become a critical component of software or service related artifacts. AI could theoretically allow for a repurposing of products beyond what the design intended. If not this extreme, it would permit for user experiences that the designer had not conceived. To account for this, designers must choose to set limits at conception and through iteration, or choose to omit restrictions. I’m interested in the designer’s process of making these decisions as well as the impact that the decisions have on user relationships with products. In particular, I am interested in how we teach this area of design research to designers. This is a topic that encompasses design process, decision making, and organizational structure.

Design Research and the Borrowing of Methodologies

MICHAEL LAHEY
cultural studies, design, design education, design research, methodology

Aiming to grapple with the question, “What is not design research?” is a vexing and thorny dilemma namely because what counts as design research seems ill-defined in its clearest moments.

To be sure, “design research” is a contestable phrase that shares something in common with the transdisciplinary field of “cultural studies.” Both are seen as hybrid fields that borrow methods and insights from established disciplines. This means that we can see design research and/or cultural studies scholarship pop up in a wide range of academic disciplines.

First, I will chart the similarities between cultural studies and design research as a way to broadly define the loose strands that hold design research together. Second, I will point out some of the commitments to self-reflexive definition building that cultural studies scholars have done through conferences and journals as a way to offer some cohesion to their bricolage of theories, methods, and ideas.

The goal of comparing and contrasting design research and cultural studies would be to lay a foundation to chart the various methods that count as design research. Additionally, this would allow us to take the tentative steps toward understanding how comfortably the odd mishmash of theories from anthropology, computer science, fine art, and psychology live under the same umbrella. Finally, we might ask who is qualified to teach design research if design research borrows from such disparate domains.
The Abstraction of the Individual

NICOLE BEATTIE

Public Housing, Chile, Chilean history, Mapping, Urban planning, Architecture, Sunlight, Mass production, Individual scale

As part of my doctoral research work on public housing development in Chile, I gathered data to create my own maps of the cities and public housing developments visited using Geographic Information System (ArchGIS). These maps were created using existing government metadata for purposes of accuracy and scale. Borrowing from James C. Scott ideas in his book Seeing Like a State, about how map-making by necessity highlights what is relevant to the mapmaker leaving other information out, I decided to test Scott’s idea by zooming in on the city maps I had created. A main hypothesis in my thesis stipulates that at the strategic planning level, public housing development in Chile is missing important information that would lead to more site-sensitive design projects. The question being, where is the information getting lost? To try to answer this question I created a series of design diagrams following a progressive close-up of the city maps from the regional scale to the level of individual public home. Given the scale and graphic choices made at the regional scale this ended up eliminating the specificity of each resident as I zoomed in. By using Artistic/Design Research to caricature an underlying condition in the public housing design process I was able to visually synthesize what each family, with its individual characteristics and needs appears for the planning team, a collapsed square of flat red paint. In an increasingly visual culture, image making (as well as image omission) are powerful social movers (or paralyzers) and is an area where artistic/design research can prove to be a formidable investigation tool.

Applying design research in community development and city building

OLGA SEMENOVYCH

community development, city building, innovation

Given my background in urban planning, I have been interested in exploring how to apply design research methods and approaches to innovate community development and city building. These processes are often dominated by expert-driven policy agendas, funder-prescribed mandates and “starchitect”-led large-scale developments, and as a result, end up producing same old solutions that are far removed from the lived experiences of people they are meant to benefit. Design research provides an opportunity to ask new questions, incorporate more diverse voices, and develop more actionable local projects that connect to systemic change.

At Groundswell Projects we are working in two ways to support this. One is by applying design research methods in citizen engagement and community consultation processes. We have been able to demonstrate the value of creative and human-centred methods in producing more meaningful resident input for urban design and development projects. The second is working more deeply with local champion organizations that are embedded within communities but are also connected into the policy dialogue. For example, we have been supporting a food bank in developing sustainable food security solutions through design research initiatives. We helped to explore social enterprise opportunities that would reframe the role of the food bank and leverage its existing strengths in food distribution and delivery. Currently we are supporting the development of a community supermarket in a low-income neighborhood, where we engaged a diverse stakeholder group in a design exercise to envision a variety of solutions for addressing local food access and related social needs.
Cognitive processes and latent knowledge structures in design methods and interpretation

PHILIP PLOWRIGHT
Architecture, cognitive linguistics, qualitative analysis, design thinking, cognitive structure, semantics, methodology

The work described in this abstract is not design that uses research but research that studies design. The purpose of the work is to bring structure and firmness to aspects of design that we do not believe, falsely, is describable. This has generated two major directions, namely 1) the study of the cognitive structure and tools found in design methods (process), and 2) the investigation of value structures found as latent knowledge in architecture (interpretation). The first project uses cognitive theory and grounded theory to analyze case-studies through decomposition, identifying core operations in design methods. Abandoning the attempt to document methods used in architectural design, the research instead focused on the larger cognitive frameworks and reoccurring tactics that where shared between methods. The outcome showed persistent, underlying frameworks that are orientated to certain information structures. The second direction applies methods and theory based in discourse analysis and cognitive linguistics. Critical Discourse Analysis (CDA), Latent Semantic Analysis (LSA) and Conceptual Metaphor Theory (CMT) are applied to study value systems found in design disciplines. CMT, in particular, allows reveals conceptual patterns of metaphors found in human cognitive space that form foundational mechanisms of thinking built on sensori-motor and environmental schema and gestalts. This project traces latent metaphor instances back to established schemata structures and suggests that while architectural discourse can be considered to be specific to the discipline and maintains exclusionary style and terminology, that discourse is built upon the same cognitive structure as all other use of the English language.

Why we have to do research when we are designing

RAN XU
Graphic design, artistic design, art and science

It’s been a long time that I have been interested in designing research as a topic. The theoretical system of art & design has now become more and more mature and complete, unlike in the old times, designers have been groping in the dark. The answer to how the contemporary designers improve their self-ability and how to complete a mature design has been answered by studying designing research.

Different from other subjects, the process of designing research is not only based on abstract data but also the reaction of data or visual referent in the designer’s brain, this process it’s a coexistence of Rationality and Sensibility, because design should be the product of the unification of science and art. [Zhan Jun, Don. 2012. The history of modern western design art. Second edition. Shandong, China: The Shandong Education Press.] On the one hand, the design must be quite logical, when you track back to the reason for any result of design, it should always be reasonable, on the other hand, designing also should have the perceptual part, providing the visual enjoyment for their audience, making a design not a cold tool but a masterpiece of human nature. These two points are the prerequisite of a great design in my view so far.

Therefore, the reason why designers need to do research in art studying, it is to precisely repeat the exercise of their logical thinking and the ability to create beauty. In the specific case study, to see the information, to communicate with other designers, to get the final results or conclusions step by step, then, not only the final result or conclusion is important, but also this process will help us to gain a lot.
Play for Desirable Futures

ROLAND GRAF
playful interactivity, speculative design, technology development

Playful interactivity can be an effective strategy to engage a wider public with critical topics and speculative ideas. To what extent, however, can speculative play and design also be a “serious” strategy for the development of new technologies or future modes of human interactions? Building on findings of two case studies of speculative design projects that led to patent applications — “Solar Pink Pong” and “Internet of Shoes” — I started to explore what might appear to be a highly speculative question itself: can the extensive research on the benefits of play in childhood development (i.e. the ability to creatively adapt to, survive, thrive in and shape social and physical environments even in unpredictable or stressful situations) serve as a lens for technology development vis-à-vis uncertain future scenarios? In other words, could more play elements in engineering and design practice and education better train for the unexpected and help to prototype and build more effectively and more often desirable futures?

Design Research to Align Organizations’ Values with the People they Serve

RUTH SILVER
Design Research, Values, Ethics, Organizational Change, Design Criteria, Decision Making, Futures, Foresight

For more than 10 years we’ve been using Design Research methodology to help clients ask better questions, understand the people they care about most and to change from the outside in. The clients who’ve chosen to work with us at Groundswell Projects are predominantly those who’ve realized the world around them has changed and they need to adapt in order to survive. Our best work takes a long time and requires our client to take risks, it’s not for everybody. Essentially the best projects boil down to examining an organization’s reason to exist, the resources they have and the people they serve. We help them define these in terms of values so that they can make values based decisions about their future. Working cross sectorally, but with clients all set out to make the world a better place, we are starting to collect and define values of the future. This practice is about defining design research by doing design research. More and more, our practice includes more than consulting, but teaching and disseminating these new values within organizations.
Smartphone as a Design Research Tool

SHIRIN RABAN
Physical, experience, digital, research, Storytelling, collaboration, culture, film, smartphone, history

The challenge I see as a graphic design educator is that students search the first page of Google without in-depth questioning before addressing design projects. I would like to start a dialogue about design research that bridges the gap between “physical and digital experiences”1 to help students become more agile with their research methods. One versatile research tool most students have in their pocket is their smartphone. When students are out and about, they get to curate their own experience of environments. The smartphone provides that lens they choose to see the world through as they film sections of that experience. During an experimental visual storytelling workshop I designed for my Design History in Context students, three students filmed sections of Venice Beach on their smartphones. The prompt was to explain a local culture in a collaborative short film. The smartphone became a powerful research tool in revealing new meanings through each student’s own artistic and international lens. The Italian architect focused on the canals and building murals, the Greek communication specialist sought the people, and the Turkish painter followed the communicator’s interactions and explorations of the area. Students unified their collaborative footage of real life events and historical paintings into a four-minute black and white musical film. Without any words they created an experiential history of Venice Beach, an accurate reflection of conversations in our times. I am looking forward to discussions regarding finding agency in defining design research contexts.

Citations

Focused Research and Community Outreach in College-level Foundational Design Courses

SHELI PETERSEN, CARLEY PETERSEN-DURDEN
Focused Research and Aesthetics, Community Outreach, Service Leadership

The traditional Bauhaus model remains a key pedagogical tool in helping students hone visual language skills in “reading” and “speaking” imagery. In today’s world, it’s also essential that entry-level students bring focused research, innovative ideas, and aesthetics to solving real-world problems for the betterment of their community. This wholistic approach to foundational design courses prepares students for service leadership in the 21st century.

In Spring 2018, my Peru State College 2D Design class created posters for the Power of Wind Exhibition, hosted by the University of Nebraska-Lincoln Kimmel Education & Research Center. 460 POW entries, including art, poetry, and design from 30 countries and K-16 regional schools, educated viewers interested in traditional and alternative energy. After researching specific aspects of Wind Technology, students fused content with imagery to produce powerfully-messaged designs.

My Fall 2017 PSC Graphic Design class created display panels for the College Marketing Office highlighting PSC’s acceptance of African-Americans during the early 20th century. While the College broke ground fostering educational opportunities for black students, little was recorded of their progress. Nonetheless, the Design class incorporated information about John H. Miller, a civil war veteran, and Eulalia Overall, an Omaha public school teacher, to posthumously celebrate their accomplishments.

Students researching and developing community-based projects engage in real-world learning and produce impactful design. Through discussion at the AIGA Decipher Conference, I will share strategies for combining aesthetics with research to make community outreach a key component of foundational design courses. In my new position as
Graphic Design faculty at Texas Woman's University, I will expand the use of research in advanced and graduate courses to promote student leadership in local and regional communities. I invite input from peers regarding their own pedagogical approaches to enhancing community through aesthetic innovation.

Designing for pediatric patients with chronic illness

SUN YOUNG PARK
Healthcare, Pediatric patients, Human-Computer Interaction, Socio-technical systems

My research lies at the intersection of HCI, Design, and Health Informatics. Specifically, I’m interested in designing human-centered technology that enables people to gain and develop more informed relationships with their health data, and examining socio-technological impacts of health technology in both clinical and non-clinical settings. In my current research, I study designing a health communication technology for pediatric patients with chronic illness not only to improve their information-sharing with their caregivers and providers but also to help their communication about their emotional, social, and other relevant needs in daily lives. Involvement of pediatric patients is not sufficiently supported in the current practice because pediatric patients lack the abilities to express their needs, manage their treatment, and make appropriate health decisions. Furthermore, existing mobile health applications and online tools enable learning about health information and provide distractions from pain, yet provide little support for pediatric patients in terms of what information should be shared, how to communicate the information, and how to express their needs.

The long-term goals of my research are 1) to understand the ways in which pediatric patients communicate and share health-related information with their caregivers and clinicians; 2) to help pediatric patients become active communicators and participants in their own care; and 3) to inform clinicians of the information needs and emotional sensitivities of pediatric patients in order to provide better care.
Design data? Possibilities and pitfalls

TANIA SCHLATTER
visual communication design, interaction design, information design, design education, design research, design data, user centered design, UX, design practice

I wear two hats professionally. I work as the UX & UI lead in a team of software developers. I conduct research (interviews, create and evaluate conceptual prototypes, facilitate participatory design sessions, design and conduct usability tests), and lead two design researchers. Our work is to design tools for [traditional, science-based] researchers. Our largest and most successful tool is Dataverse, open source data repository software. There is a Dataverse installation at Harvard, and at 33 other organizations around the world. I wonder what implications for visual communication design might be if “data” from design research were archived, and shared, as in a Dataverse.

In my other role, I teach information and interaction design to students at Northeastern University. I teach design research practices as part of the artifact creation processes that are the emphasis of courses. I worry about teaching design research methods sufficiently. Materials and examples are readily available, but time is short, and there are no clear standards.

When we talk about design research, I wonder if “scholarly” design research is accessible. Unlike what I’ll call practical UX or UCD design research, scholarly design research is hard to find, can be expensive, and hard to read. Topics tend to be obscure. These concerns parallel pitfalls of non-design scholarly research and publishing, which is in flux. Practical design research is vital to interactive design practice today. What can we learn from research-based disciplines, and practical [UX/UCD] design research to help inform, and model active, relevant scholarly design research?

Teaching interdisciplinary design research

TRACI RIDER
Interdisciplinary, research education, research paradigms, research methods, practice-based research

The line is often blurred between design research and design practice. Research and exploring design alternatives become confused. Understanding the best way to frame and scaffold design research education at the doctorate level, particularly within an interdisciplinary design group, is a challenge. Within the interdisciplinary PhD in Design and emerging Doctor of Design (DDes) programs at North Carolina State University, we strive to provide a strong foundation to those interested in design research, interested in both academic and professional futures. I am interested in sharing our processes and practices, and hearing about how others immersed in research are approaching the development of a strong research foundation across experience levels, interests and fields in design.

Specifically, the foundational courses I teach in both programs are geared toward the framing and basics of how to do design research. We start with paradigms, generating different types of knowledge, and theoretical perspectives, then segue into a review of potential methods from simulation to ethnography and beyond, establishing a toolkit for our students and future researchers. With the implementation of our new DDes program, a distance learning program for practitioners, which joins our on-campus PhD program, synergies and challenges are emerging between the two degrees focused on industry and academia, respectively.

With research gaining momentum, I am interested in conversations that can help our students frame inquiries that support both academia and practice, advocate for strength in design research, and help to further establish the value of research in the design fields.
Spreading Understanding of and Appreciation for Good Design

VINCENT QIU
Design, research, dissemination, teaching, advocacy, perspective, interdisciplinary, integration

Good design makes the difference between an obtuse tool that slows us down and an intuitive tool that enhances our ability to work effectively and efficiently. Too often, I see poorly designed tools taking up space and their corresponding users getting frustrated until either resigning themselves to accept and deal with the ineffectual objects or being forced to seek another means of tackling their task. However, what I do not often see is sufficient praise given to well-designed tools, and this implies to me a lack of understanding on the part of the population of the true value of good design. Consequently, I believe that it is important to educate people on this topic and to integrate robust design methods into more disciplines. Furthermore, I believe that spreading the understanding of and appreciation for good design is essential for the overall continued health and development of the field. It would motivate more individuals to pursue design research, would foster greater support for design research efforts, and would promote further sharing of design and design research topics. How best to go about working towards these ends, however, is an area where I do not have much knowledge or experience. I hope to devote at least some portion of my graduate education to learning, researching, and exploring methods for realizing these goals.

Realigning Gestalt theory and design practice

XINRAN HU
Gestalt, Eye-tracking, visual principles, apply, design

As a student, I learned Gestalt visual principles; as a designer, I apply those principles to my work; as a design educator, I have taught Gestalt principles for over 15 years. But recently when I used an eye tracker to test how viewers see Gestalt visual patterns and design works applying those visual principles, I was surprised to discover a gap between understanding Gestalt visual principles and applying them to design works. My research addresses using an eye tracker to discover how viewers respond to Gestalt visual principles so that we can apply Gestalt theory to design practice more specifically and effectively.
Visual Translation: Typographic study on Cross-cultural Branding

YVONNE CAO
Cross-cultural, Typography, Branding, Chinese, Teaching/Education

When an American brand attempts to expand its market overseas, it needs to translate the brand into the local language in order for it to be understood by the new market. It is often difficult, however, for graphic designers to find a typeface in the local language to match the look of their English brand identity. This is particularly significant in Asian and other countries that do not use the Roman alphabet. My research “Visual Translation” seeks to identify US brands that require more work on their overseas brand identities and to provide creative solutions for the problem. It develops smooth transitional type design methodologies for the designer who is working in a cross-cultural environment for international brands.

The logo of a multinational brand needs to be recognizable in any language, which is why so much time and effort goes into developing a strong design. But it’s still fun to see what Subway’s logo looks like in Chinese, or what FedEx looks like in Arabic. Based on the number of global companies that have rendered their brand marks in local languages and alphabets as they expand to foreign markets. Logos evidently don’t operate on quite such an abstract level after all; they are ultimately linguistic artifacts and must be reckoned with as such. How do you render a famous brand mark in a new language and/or alphabet, while preserving its general look and character? So, we have a great design challenge.

Putting it All Together

VINICIUS LIMA
design research, promotion, tenure, scholarship, creative work, doing

Although I am fortunate to be a part of an institution that defines research in design in an expansive fashion, I have been observing a personal need to frame my opportunities within a wealth of provided options. When looking at the themes for Decipher 2018, I have an interest in all areas. But looking at it with a practical eye, the “Doing” theme interests me the most.

I am a faculty at a teaching institution. The university expects that faculty will uphold the teacher-scholar model by having an active scholarship program that will inform their teaching. Additionally, this practice must be peer-reviewed.

Since starting, I have worked in a variety of projects: self-initiated pieces, experimental work, exhibitions, academic papers, conference presentations, design award submissions, interdisciplinary collaborations. I am thankful for the chance I was granted to work in such a diverse scope of work and receiving recognition for most of it. But with diversity may come to a sense of divergence as well. To me, these projects do not feel like part of a single program.

Having a unified research agenda would benefit future dissemination plans, define possible collaborators, and frame my practice for an upcoming tenure process. Moreover, I hope that attending Decipher will help me understand my opportunities to bring design research into the classroom. Being through leveraging the AIGA Designer 2025 themes in my research or understanding other practices that could inform the ways I teach students.
Research: A Common Ground for Healthcare and Design

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Keywords
healthcare, collaboration, research, IRB, interdisciplinary, experience design

ABSTRACT
The hospital may not be the first setting that comes to mind when thinking about design research. As healthcare experience designers embedded in a hospital, we have discovered that through design research we have been able to forge significant relationships and powerful collaborations across disciplines. The design process initially seems foreign to healthcare professionals, but participating in design research demystifies this process.

One of our projects led to an IRB approved study piloting a program created as a result of our extensive research, which included environmental scans, numerous interviews, observations, and co-creative workshops with stakeholders such as patients, clinical care teams, EHR analysts, state employees, and others. The study and its results serve as a bridge between the languages of clinical medicine and design. Our clinical and public health collaborators affirmed the value of our design research process in helping interdisciplinary teams uncover important insights about the explicit and implicit needs of patients, families, and care teams. This work demonstrates how these highly collaborative and inclusive design research methods lead to better outcomes and higher rates of engagement in healthcare settings.

A common challenge faced by healthcare design researchers is how to merge qualitative data with clinical metrics. The field is capable of overcoming this challenge and will contribute meaningfully to improving healthcare systems and experiences.

Can students be taught to design a better way to live, while simultaneously being taught how to design?

AMY FIDLER
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Keywords
mental health, anxiety, adhd, autism, behavior, health, lifestyle, design school, neurodiversity, creativity, mindfulness, yoga, meditation

PERPETUATING UNHEALTHY LIFESTYLES IN DESIGN SCHOOL ULTIMATELY CREATES DISSATISFIED, MEDIOCRE DESIGN PROFESSIONALS.

It’s well understood that a good classroom dynamic can create an environment where optimal learning and creativity springboard into wonderful outcomes. As we prepare our students for life in the profession, what is the responsibility to also help them acquire mental clarity, good working habits and a balanced approach to their careers? At what point does design school stop perpetuating unhealthy and unproductive practices in favor of better choices—responsible working hours, healthy habits, mindfulness + physical health, client boundaries... There is much written about practicing ethical design in terms of designer’s responsibility to the client and profession, but is there anything outlining designer’s responsibility to self?

Media depictions of the profession reinforce the stereotypical lifestyle of the tortured creative, celebrating terrible choices as not just a coping mechanism but as an understood lifestyle expected of the profession. Certainly, pulling an all-nighter (or two) is a rite of passage that can teach persistence and resilience...

The legend of the tortured artist may have brought artists fame and prominence years ago, but today’s young makers need to be clear headed to handle the creative challenges and demands of the profession. With the myth of the creative’s life seeming reliance on alcohol (numbing agent, coping mechanism and social lubricant), junk food (vending
machines, energy drinks, grande double espresso extra shot lattes, late-night takeout and pizza deliveries), and sedentarily staring at screens nonstop, amplified in the media (insert every film/tv show featuring a designer/marketing exec)—it’s no wonder that existing malaise is amplified in those engaging in these behaviors habitually.

Students entering into design programs have changed. Anxiety is prominent amongst students, as is fear of failure, fear of starting and fear of everything in between. Students are often working to support themselves (and not just for extra spending money). Social media use as well as being overall generally distracted has contributed to the collective inability to focus and a decline of satisfaction... Mental health challenges are even more prominent (and were present before but not as openly acknowledged). Also, creative fields like design tend to be landing places for those whose neurodiversity (ADHD, High functioning autism, etc) can be a detrimental challenge in a typical high school classroom, but can be a true strength when embraced for their abilities to approach creative problem solving in an atypical way during college studios—but these types of creatives are already susceptible to having comorbidity of additional mental health challenges, that get exacerbated by the physical and mental stress of unhealthy lifestyles.

To find a place where today’s student can find true creativity and innovative problem solving, accompanied by the ability to make deadlines and clearly communicate with colleagues, collaborators and clients, requires working from a place of health and vibrancy. How can design school perpetuate this alternative, healthy balanced approach to the profession, rather than reinforcing and celebrating the stereotypical irresponsible, unproductive and ultimately costly behavior? It is a must in order to adequately prepare young minds to uphold the challenges posed by the profession’s projected designer of 2025.

Figure 1. Graphic design students experiencing yoga at the start of class. Bowling Green State University, Bowling Green, Ohio. Photo by Amy Fidler.

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Developing A Research Method To Study Cultural Influences In Visual Forms

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Keywords
Research Methods. Cultural Artifact, Cross-Culture, Visual Forms

Even though some countries share similar roots in religion and philosophy, those countries’ arts, customs, and languages are often different. Designing visual information and experience requires more in-depth understanding, not only of design and technology but also of human behavior and culture as known are bound up in each other (Winston, 209).

This study will share the journey of answering the two following hypotheses; 1) familiar visual elements which can be easily found in the living environment or from cultural inheritance will create a more comfortable feeling, and people will be attracted to these familiar visual elements and 2) familiar visual elements which can be easily found in the living environment or from cultural inheritance will not have visual attention or appeal because people see it as old rather than new.

The first step was to collect images and forms from three countries in which have similar influences from religion, art, and philosophy. These visual elements often appeared in the building, customs, products, etc. Also, those visual forms have been adopted by various media including websites, corporate identity symbols, posters, etc. The second step was to identify the visual forms that can be recognized by people who share the same history, culture, and living environment (figure 1). The initial study was done to verify the relevance of the selected images in one country and data is collected from one hundred people through face to face interviews. The research process and methods will be introduced along with the initial data.

Figure 1. Forms Simplified from Objects.

REFERENCES