

Design Commons: An Enhanced Vision for Designing Differently

Vision: In the planning of the new Design Center, we strongly endorse principles and processes of design thinking to address grand social and educational challenges of the 21st Century. We call for strong social and learning infrastructures to complement and inform the design of the physical spaces and technical infrastructures. We emphasize here the use of design thinking endorsed by design leaders like IDEO that stress the importance of diverse teams working together to solve difficult problems. This approach for using multiple perspectives has proven successful, but is extremely difficult to do. It is indeed much cheaper, easier and faster to select and work with people you know and who are like you. But to get expanded insights from diverse teams requires patience and learning. The Design Center's social infrastructure presents a defining challenge and great opportunity to develop a program on Inclusive Design at Illinois, central to the success of the Center, and to be a considered in parallel with the architectural innovations already underway.

Why Inclusive Design?

Innovative STEM-based companies, campuses, and fields can be well-resourced and highly desirable sites to work or study, but they have been culturally-challenged in drawing in and retaining students of diverse profiles. Illinois' Inclusive Illinois statement reflects the campus' strong commitment to fostering inclusion and diversity, and priorities in "creating, building, and sustaining spaces, places, and environments that are welcoming, inclusive, and affirming, whether in the classroom, the office, the lab, or the athletic field." The Design Center can be an exemplar in this mission, and work to solve a central challenge of innovation sectors.

- Studies reveal the continuing need to build inclusive cultures of innovation and technology design in both business and higher ed. In 2013, while 98% of companies in the S&P 100 had at least one female director, for instance, 80% of Silicon Valley 150 companies had one woman director or none at all. Companies like Facebook and Twitter have also received high media attention and been critiqued by prominent civil rights leaders like the Rev. Jesse Jackson for their striking lack of diversity in staff.
- Higher education has been equally challenged in diversifying STEM. In 2010, while 57 % of undergrad degree recipients were female, less than 20% of engineering degree recipients were female and less than 14% were underrepresented minorities.
- High media attention to discrimination lawsuits in Silicon Valley and "bro" cultures in IT and design-based fields are likely already alienating certain students from STEM.
- Large design opportunities are missed when "design doing" is unevenly represented. A study by Deloitte shows women's choices impact up to 85% of purchasing decisions and up to \$4.3 trillion of total U.S. consumer spending of \$5.9 trillion. A report by Parks Associates also shows more women than men are downloading movies and music and women do the majority of game-playing across some platforms. Further, studies show communities of color are disproportionately active social media publishers.
- All of the above opens opportunities for creative programming inclusive of "designing differently" that can build upon Illinois' unique mission as a public land-grant university serving diverse populations and generating diverse design opportunities in the Midwest.

Building Multidisciplinary Inclusive Design at Illinois

As a multidisciplinary team of scholars committed to design studies and practice, we draw from key learning experiences and cases to envision the future of inclusive design:

- Fields like science and technology studies, participatory design, and critical information studies have developed 30+ years of research and methods on inclusive design and multidisciplinary collaboration now used by professional and academic designers alike.

- Intel’s Genevieve Bell, Xerox PARC’s Lucy Suchman, Helen Nissenbaum, and Susan Leigh Star (among other design practitioners and scholars) are highly regarded within industry and the academy, with their analysis on gender bias applied in multiple fields.
- National trends in undergraduate research and learning are moving towards cross-disciplinary models that aim to serve a global society. Such trends include building collaborations to extend engagements with communities, organizations, and underrepresented groups to address problems of local, national and global import.
- Today’s students seek and value environments and experiences that allow them to actively explore new knowledge by tackling real-world problems and exercising multi-disciplinary knowledge sets. Authentic tasks that present meaningful, realistic challenges create conditions conducive to student engagement and learning. But this cannot happen without intention, planning and curricular scaffolding. Design-focused campus service learning programs, like Action Research Illinois, and the popular course LINC_Learning in Community, could inform this kind of activity in the Design Center.
- Work in enhancing in multi-disciplinary curricula at MIT and Stanford lead them to be ranked in 2015 among the top three universities worldwide (with Harvard) for humanities and arts education by the *Times Higher Education*. Stressing the importance of inter-connected curricula, Melissa Nobles, Dean of MIT’s School of Humanities, Arts, and Social Sciences, notes: “The world’s problems are so complex they’re not only science and technological problems. They are as much human and moral problems.”
- The Council on Undergraduate Research notes that institutions striving for excellence should embrace opportunities for “integrated,” peer-to-peer practices and inter-disciplinary teamwork to foster a community of student research scholars. To get these students into the Center, we must provide diverse types of tools in cross-disciplinary pedagogies, informed by what students from diverse backgrounds indicate they need.
- Illinois’ own campus has fostered exemplary models for inclusive design practice, ranging from the CU Community Fab Lab to celebrated cases in design history, like the origins of DRES in the 1940s, the Experimental Music Lab (EML) early developments in electronic music in the 1950s, PLATO as the first educational computing and multi-user video game platform in the 1960s, and the pioneering work in cybernetics at the Biological Computing Lab’s in the 1970s. Such cases connected students and researchers across the campus in multidisciplinary innovation spaces celebrated for their advancements of design thinking, doing and culture.

An Enhanced Vision for Inclusion

We thus echo the goals stated in the Design Center Proposal, and expand upon them with reference to Illinois’ own history, existing campus assets, and its Report on Campus Conversations on Undergraduate Education. to point to opportunities to innovate beyond existing models for inclusive design:

- **Connection across people and disciplines.** Supporting discovery-based engagement for all students, particularly for those who are not already self-identified as engaged with “design” fields, is essential. The development of electronic music and the EML at Illinois demonstrates the value added to design when innovation bridges fields and supports the entry of new actors into design practice.
- **Inspiration at Illinois.** Cases like PLATO showcase how the heritage of making of Illinois included physical *and social* infrastructures. PLATO’s strong multidisciplinary, community-driven *culture* allowed diverse student developers to collaborate to build unofficial, but successful innovations - including highly popular multi-user video game

platforms - far ahead of their time. The Design Center can extend such dual investments.

- **Implementation of land grant mission.** The CU Community Fab Lab demonstrates UIUC’s ability to develop cost-effective and scalable models for introducing learners of all kinds to rapid prototyping and digital fabrication. Its work to foster digital literacies has expanded to local, state and national levels through the building of active partnerships and inclusive models of engagement that can also benefit The Design Center’s growth.
- **Openness and transparency, physical and virtual.** Design practitioners stress how openness and transparency require recognition of the “radical asymmetries in relative access” and literacies that exist between different user groups that can “profoundly limit possibilities for interactivity” in intelligent spaces and virtual environments. The Design Center can strengthen approaches to inclusive design in precisely accounting for diverse users’ differing levels of access and literacies in its design of both physical and virtual spaces that more fully embrace values of openness and transparency.
- **Generosity of support and spirit.** Makerspace Urbana demonstrates how social generosity and support in developing new technological literacies involves not only the sharing of certain forms of “technical” expertise, but recognizing the multiple forms of expertises that can and should be shared. Expertise is not the province of faculty, staff, and self-identified technical experts alone. Informal and multi-directional learning must be promoted to cultivate a truly inclusive and supportive community of designers.
- **Bias for action.** Inclusive Design should support inclusive and thoughtful action that integrates theory and practice. Particularly when action involves new, powerful and under-tested technologies, history suggests inclusive spaces of debate and reflection are important assets in thinking through consequences before technological actions take place. Reflection and debate can help us to rethink actions to determine other potentially better paths. Theory and practice must be reflexively connected in making processes.
- **Part of the whole.** For the Center to fulfill its vision of serving as a connector to many campus units, structural support to develop, enhance and bridge curricular connections across campus should be leveraged. Similar to units like the Illinois Informatics Institute, which connects courses in many disciplines around the theme of applied computing, the Design Center could help to facilitate connections between design-related tracks in many majors. This would provide a framework for students to truly use the center as a hub to link to new buildings, units and people across design spaces on campus.
- **Immersion as innovation.** Virtual reality and simulation environments can allow learners to explore, develop and evaluate interactions in distant places around the world, like Africa or Alaska, but will they enable students to visit north Champaign or Southern Illinois? And will students’ technologically immersive experiences, whether in Southern Illinois or Africa, also be complemented by culturally immersive ones? Technology can embed us deeper in local contexts or isolate us from them, depending on what cultural competencies we equip students with. Technological immersion should be balanced with, and not come at the expense of such culturally-competent social immersion.

Recommendations for Enhanced Leadership and Staffing

We echo the Design Center’s stated need for dedicated leadership and programming that “bring expertise and resources from across campus into the Design Center.” We stress the need for:

- Leadership from faculty and academic professionals should prioritize leaders who have “a proven ability to form connections and linkages across large, complicated institutions” *and* who also understand the need to diversify design thinking across disciplines and student groups. Further, “Intra-University” links should understand the permeable nature

of our campus-community boundaries and the benefits of engaging town hosts that the campus. Such considerations have great potential to enhance fundraising capacities.

- A “lean staff to support programming, event planning, and facility usage” of the Design Center should not disadvantage students who already face challenges to inclusion in design spaces and cultures. It is crucial that the staff include people dedicated to and knowledgeable about imaginative mixing of ideas and cultures across campus to cultivate a diverse and supportive community.
- Advisory board(s) that bring expertise and connections from across campus and community networks should address as crucial themes: 1. programming for humanities and social science fields, 2. catalyzing new pedagogical engagements with design thinking, and 3. the inclusion of under-represented groups in STEM.
- Steering groups for specific issues must balance the interests of the whole campus. A steering group on Immersion and Virtual Reality, for instance, should be balanced with groups focused on: Public Engagement and Integrated Curricula (another on programming for humanities and social science fields might also assist).
- “Technicians” - or “Creative Technologists” - should have a fourth role (in addition to the 3 already identified around supervision, maintenance and technical advice) around service as information intermediaries, connected learners and collaborative teachers. Such a role could help foster communities in the design center and direct students to many resources across campus that supplement the center.
- While every cited example of organizations to be “tapped to offer office hours” in the current proposal is related to business or engineering, organizations can and should come from every unit engaged in design across campus. These include this document’s signatories - as well as interdisciplinary student groups like Design for America, Makers UIUC or the Society of Women in Engineering, the NCSA Culture and Society working cluster, Laboratory for Audience Interactive Technologies (LAIT), and community groups like the Urbana Makerspace.

We are committed to enhancing inclusive, participatory, student-centered design experiences in the proposed Design Center. We draw from the legacy and tradition at the University of Illinois to enable the development of multi-disciplinary design - represented in the celebrated histories enumerated above. Such projects on our campus grew as much from the social innovations and cultural mix of disciplines, as from the success of material innovations. We aim to continue a tradition, and echo the campus’ stated values while taking seriously the issues of inclusion that have been central concerns of industry, the academy and student bodies alike who engage with STEM fields. Generating a safe, inclusive environment for students and users of the Design Center, and nurturing an empathic culture where students can thrive requires planning beyond architecture--though that too is very important. We are committed to continued interactions around the context, forms and programs of the Design Center to support the fullness of its success and growth within and well beyond our campus.

Signatories:

The Center for Digital Inclusion, Graduate School of Library and Information Science
 The Center for Innovation in Teaching and Learning
 Fab Lab, Illinois Informatics Institute
 Library Scholarly Commons
 Office of Undergraduate Research
 Recovering Prairie Futures, IPRH Research Cluster

Proposed Footnote: The deadline for this document was such that we could not get approval on this statement by many significant groups in town, but we want to acknowledge the key roles

played by: Makerspace Urbana, public libraries and schools, as well as other University units, including Beckman Visualization Lab, Detail + Fabrication in Architecture, and Theater, among others.