

TRAILBLAZERS

Many alumni and faculty in the department of Human Centered Design & Engineering have made significant contributions to the department, industry, and research. Here are some outstanding examples of how HCDE is changing the world:



Brian Espinosa (BS '12, MS '14) is a design researcher at HTC where he works on virtual reality projects and sponsors student capstone projects as an industry mentor. As a student in Human Centered Design & Engineering, Espinosa received the undergraduate student award for demonstrating excellence in innovation.



Rebecca Destello (MS '11) is a director of user research at Anthro-Tech, Inc., a user-centered design consultancy focused on government agencies, nonprofits and organizations with a social-impact mission. Destello is an HCDE affiliate faculty member, teaching classes in usability, user-centered design, and interaction design.



Alexis Hope (BS '05, MS '12) is a designer and researcher at the MIT Media Lab and the Center for Civic Media. Hope helped develop a portable ultrasound machine for midwives in low-resource environments. Hope received the Sackson Diversity Scholarship, Shobe Entrepreneurship Prize, and the HCDE Leadership and Engagement Award.



Beth Kolko (Professor) is co-director of the Tactical and Tactile Technology Lab and the co-founder and CEO of Shift Labs, a Seattle-based startup building low-cost medical devices for emerging markets leveraging global innovation networks. Her background in humanities informs her work on technology design and educational model reform.



Jerrod Larson (MS '03, PhD '10) is the design manager for Alaska Airlines where he manages the online user experience team and oversaw the alaskaair.com site redesign. Prior to that, he worked at Amazon and Boeing where he set UX standards. He has researched the economic and environmental impacts consumer good labeling.



Sean Munson (Assistant Professor) studies how software supports positive behavior changes and focuses on the domains of diverse information access and health and wellness. He was an Intel PhD fellow and in 2015 Munson received the College of Engineering's faculty award for excellence in teaching.



Daniel Perry (PhD '15) studies how game-based learning experiences vary based on user perceptual, affective, and cognitive capacities. He received the UW Graduate School Presidential Dissertation Fellowship and student award for demonstrating innovation in research. Perry is a data science postdoctoral scholar at the UC Berkeley.



Jaleesa Trapp (BS '11) organizes programs for young people interested in science, technology, engineering, and math. Trapp teaches underserved students about video production, web design, and mobile technology development. She is pursuing her master's degree and hopes to inspire people of color to explore STEM fields.



"The research and educational programs in the department of Human Centered Design & Engineering are setting the standard for the design of innovative technologies that put people first. Many of our graduates take key leadership roles across industries that value humans during the design process which results in award winning products."

- David W. McDonald, Department Chair and Professor

UNIVERSITY of WASHINGTON

HUMAN CENTERED DESIGN & ENGINEERING

PUTTING PEOPLE FIRST, WE RESEARCH, DESIGN, AND ENGINEER INTERACTIONS BETWEEN HUMANS AND TECHNOLOGY.



OUR MISSION

Students and faculty come together in Human Centered Design & Engineering (HCDE) at the University of Washington to design solutions to global challenges by tailoring technology to human needs and interests. By employing engineering approaches rooted in a broad range of disciplines, we investigate the interaction of people with technology and technical development. From user-centered design to human-computer interaction, we are designing the future.

EDUCATING TOMORROW'S LEADERS

Students in HCDE build a strong foundation in designing user experiences and interfaces, creating information visualizations, conducting usability research, designing for the web, and building web technologies. Beyond traditional classroom coursework, students join research groups and collaborate with faculty to address a wide range of research and design challenges. HCDE graduates find jobs as multimedia and web developers, usability engineers, interface designers, user experience researchers and information architects at high-tech companies.

INTERDISCIPLINARY RESEARCH

Our department has a world-renowned reputation for excellence in interdisciplinary research. Our success is grounded in our faculty, who come from fields as diverse as computer science, linguistics, public policy and English. From experimental studies of communication design variables to cultural studies of technology, their award-winning research breaks new ground and has broadened the knowledge base of the discipline.

DEGREE PROGRAMS

The Bachelor of Science (BS) provides a solid foundation in designing user experiences and interfaces, creating information visualizations, conducting user research, and designing and building web technologies.

The Master of Science (MS) fosters students' knowledge and skills to design and evaluate technologies and user interfaces, and prepares students for leadership roles in information design, user experience design, user research, human-computer interaction, design thinking and related specializations.

The Doctor of Philosophy (PhD) prepares students for notable careers in academia, industry, and government. Students conduct original research to design and engineer systems to support human endeavors.

The User-Centered Design (UCD) Certificate provides graduate-level students the opportunity to explore the latest theories, tools and techniques in user research and user-centered design.

CORPORATE AFFILIATES PROGRAM

The Human Centered Design & Engineering Corporate Affiliates Program provides a direct line between industry partners and HCDE students and faculty. Affiliates foster meaningful, long-term relationships with the department, resulting in technical exchange, collaboration, and interaction with faculty, students, and alumni. Current Corporate Affiliates Program members include Amazon, Expedia, Google, HTC, IBM Design, Intel, and Microsoft.

CAREERS IN HCDE

HCDE graduates find careers as designers and researchers who improve user's interactions with technology and the world around them. The department provides students with many career resources, including a jobs and internship database, information sessions with employers, and an annual career fair.

A recent survey of HCDE graduates (2014-2015) found the following most common job titles of today's alumni:

- User Experience (UX) Designer
- User Researcher
- Experience Designer
- Systems Analyst
- Design Researcher
- Software Engineer
- Interaction Designer



STUDENT DEMOGRAPHICS

Undergraduate enrollment 2015: 165
Bachelor's degrees awarded: 50

Graduate student enrollment 2015: 227
Master's degrees awarded: 66
Doctoral degrees awarded: 4

Diversity of Degree Recipients	BS	MS	PhD
Women	51%	71%	51%
Underrepresented Minorities*	17%	2%	2%
Asian Americans	31%	15%	2%
Foreign Nationals	17%	24%	36%
* African American, Latino, American Indian, and Hawaiian/Pacific Islander			

FACULTY

Composition

- 19 active core teaching and research faculty (57% female)
- 8 adjunct faculty
- 20 affiliate faculty

Honors

- Seven CAREER Awards from the National Science Foundation
- One MIT Technology Innovator Under 35 Honor
- One Presidential Early Career Award for Scientists and Engineers
- Four Jay R. Gould Awards for Excellence in Teaching from the Society for Technical Communication
- Two William Elgin Wickenden Awards from the American Society of Engineering Education

RESEARCH AND INNOVATION

HCDE faculty's research and teaching focus on six interrelated areas of study:

INFLUENCING BEHAVIOR, THINKING, AND AWARENESS

We develop interventions and design new tools to support or prompt positive changes in people's behavior, thinking, or awareness. Focus areas include:

- Health and wellness
- Leisure
- Education
- Civic engagement
- Politics
- Social influence
- Persuasive technology
- Behavior change
- Reflection, mindfulness and awareness
- Incentives and motivation

DESIGN FOR EMERGENT COLLABORATIONS AND ORGANIZATIONS

We develop digital technologies to enable people to collaborate and interact in novel ways. With a focus on the emerging uses, current practices, and organizational arrangements of collaborative technologies, we design, implement and assess sociotechnical systems. Our research spans decision making, leisure, work, volunteerism, creativity, and innovation. Research domains include:

- Crisis informatics
- Maritime operations
- Collaborative text production
- Infrastructure studies

DATA SCIENCE AND DATA VISUALIZATION

We focus on the design, implementation, and evaluation of human-centered systems and techniques, such as visual analytics to support collaborative activities in environments that generate and require very large and complex data sets.



MATERIAL AND EMBODIED TECHNOLOGIES

With a focus on the intersection of craft and digital fabrication across platforms and form factors, we evaluate the impact of computing on other technologies and on social relationships and communities. With applications in home energy monitoring, 3D printing, and technology repair, areas of research include:

- Maker cultures
- Craft and repair
- Physical computing
- Open source hardware
- Digital fabrication
- Infrastructure studies
- Science and technology studies

LEARNING IN PROFESSIONAL AND TECHNICAL ENVIRONMENTS

Our research spans:

- Professional development and identity
- Translation of knowledge into action
- Expertise in problem framing
- Representation of design contexts
- Digital interfaces
- Reflection
- Engineering learning
- Design learning
- Language learning
- Learning from text

LOW RESOURCE AND UNDERSERVED POPULATIONS

With a focus on resource-constrained environments, we develop and deploy technologies to broaden the adoption of diverse technological solutions that can serve multiple populations. Areas of research include:

- Low-resource environments
- High-risk and safety-critical environments
- Complex systems
- Crisis informatics
- Disaster and humanitarian response
- Humanitarian relief
- Information and communication technologies for development
- Human-computer interaction for development