UMSI research from 2022 CHI proceedings

University of Michigan School of Information faculty and PhD students have earned two Honorable Mention designations at the 2022 ACM CHI Conference on Human Factors in Computing Systems.

Honorable mention awards go to the top five percent of accepted papers at ACM CHI, the premiere international conference on Human-Computer Interaction.

In addition to these two papers, UMSI faculty and students had nearly 60 additional research papers, late-breaking works, panels, and workshops accepted.

This year's conference will take place virtually and in-person In New Orleans, Louisiana April 30-May 5.

See below for a complete list of UMSI research. School of Information faculty, students and researchers are listed in **bold**, and the names of other University of Michigan scholars are *italicized*.

Papers

Best Paper Honorable Mention
Paper: "CollabAlly: Accessible Collaboration Awareness in Document Editing"
Cheuk Yin Phipson Lee, Zhuohao Zhang, *Jaylin Herskovitz*, JooYoung Seo, **Anhong Guo**
Collaborative document editing tools are widely used in professional and academic workplaces. While these tools provide basic accessibility support, it is challenging for blind users to gain collaboration awareness that sighted people can easily obtain using visual cues (e.g., who is editing where and what). Through a series of co-design sessions with a blind coauthor, we identified the current practices and challenges in collaborative editing, and iteratively designed CollabAlly, a system that makes collaboration awareness in document editing accessible to blind users. CollabAlly extracts collaborator, comment, and text-change information and their context from a document and presents them in a dialog box to provide easy access and navigation. CollabAlly uses earcons to communicate background events unobtrusively, voice fonts to differentiate collaborators, and spatial audio to convey the location of document activity. In a study with 11 blind participants, we demonstrate that CollabAlly provides improved access to collaboration awareness by centralizing scattered information, sonifying visual information, and simplifying complex operations.

Best Paper Honorable Mention
Paper: "The Village: Infrastructuring Community-based Mentoring to Support Adults Experiencing Poverty"

Tawanna R. Dillahunt, Alex Jiahong Lu, Aarti Israni, *Ruchita Lodha*, Savana Brewer, Tiera S. Robinson, Angela Brown Wilson, and *Earnest Wheeler*
Mentorship and other social and relational support have been vital to poverty alleviation and transformative change. It is crucial to understand the underlying factors in the success of mentoring models and subsequent programs to support them. Thus, we conducted a mixed-methods study consisting of longitudinal surveys of community participants followed by semi-structured interviews with 28 community members, eight mentors, and two coaches participating in a community-based mentorship program. Drawing from community-based participatory research in partnership with a non-profit located in a Midwestern United States (U.S.) city, we unpack how the program supported self-sufficiency and economic mobility among adults experiencing financial hardships. Through an infrastructural lens, we attend to individuals' infrastructuring work in social support, flexibility, and trust to support a "village" model of community-based mentorship. Our results show how the village model differs from traditional mentorship models that assume dyadic, one-to-one, often didactic, and hierarchical relationships (e.g., expert and protégé, adult and child) and are used primarily in the workplace and educational settings. The village mentorship model advocates for less hierarchical and more balanced relationships in non-institutional settings and flexible communication and technological needs. We discuss new research opportunities and design strategies for rethinking technology-mediated mentorship to support poverty-stricken adults in the U.S.

Paper: "'I Didn't Know I Looked Angry': Characterizing Observed Emotion and Reported Affect at Work"
Harmanpreet Kaur, Daniel McDuff, Alex C. Williams, Jaime Teevan, Shamsi T. Iqbal
With the growing prevalence of affective computing applications, Automatic Emotion Recognition (AER) technologies have garnered attention in both research and industry settings. Initially limited to speech-based applications, AER technologies now include analysis of facial landmarks to provide predicted probabilities of a common subset of emotions (e.g., anger, happiness) for faces observed in an image or video frame. In this paper, we study the relationship between AER outputs and self-reports of affect employed by prior work, in the context of information work at a technology company. We compare the continuous observed emotion output from an AER tool to discrete reported affect obtained via a one-day combined tool-use and diary study (N=15). We provide empirical evidence showing that these signals do not completely align, and find that using additional workplace context only improves alignment up to 58.6%. These results suggest affect must be studied in the context it is being expressed, and observed emotion signal should not replace internal reported affect for affective computing applications.

Paper: Accost, Accede, or Amplify: Attitudes towards COVID-19 Misinformation on WhatsApp in India
Rama Adithya Caranasi, **Joyojeet Pal**, Aditya Vashistha
Collaborative document editing tools are widely used in professional and academic workplaces. While these tools provide basic accessibility support, it is challenging for blind users to gain collaboration awareness that sighted people can easily obtain using visual cues (e.g., who is editing where and what). Through a series of co-design sessions with a blind coauthor, we

identified the current practices and challenges in collaborative editing, and iteratively designed CollabAlly, a system that makes collaboration awareness in document editing accessible to blind users. CollabAlly extracts collaborator, comment, and text-change information and their context from a document and presents them in a dialog box to provide easy access and navigation. CollabAlly uses earcons to communicate background events unobtrusively, voice fonts to differentiate collaborators, and spatial audio to convey the location of document activity. In a study with 11 blind participants, we demonstrate that CollabAlly provides improved access to collaboration awareness by centralizing scattered information, sonifying visual information, and simplifying complex operations.

Paper: "Designing Chatbots with Black Americans with Chronic Conditions: Overcoming Challenges against COVID-19"
Junhan Kim, Jana Muhic, Lionel Peter Robert, Sun Young Park
Recently, chatbots have been deployed in health care in various ways such as providing educational information, and monitoring and triaging symptoms. However, they can be ineffective when they are designed without a careful consideration of the cultural context of the users, especially for marginalized groups. Chatbots designed without cultural understanding may result in loss of trust and disengagement of the user. In this paper, through an interview study, we attempt to understand how chatbots can be better designed for Black American communities within the context of COVID-19. Along with the interviews, we performed design activities with 18 Black Americans that allowed them to envision and design their own chatbot to address their needs and challenges during the pandemic. We report our findings on our participants' needs for chatbots' roles and features, and their challenges in using chatbots. We then present design implications for future chatbot design for the Black American population.

Paper: "Diff in the Loop: Supporting Data Comparison in Exploratory Data Analysis"
April Yi Wang, Will Epperson, Robert DeLine, and Steven M. Drucker
Data science is characterized by evolution: since data science is exploratory, results evolve from moment to moment; since it can be collaborative, results evolve as the work changes hands. While existing tools help data scientists track changes in code, they provide less support for understanding the iterative changes that the code produces in the data. We explore the idea of visualizing differences in datasets as a core feature of exploratory data analysis, a concept we call Diff in the Loop (DITL). We evaluated DITL in a user study with 16 professional data scientists and found it helped them understand the implications of their actions when manipulating data. We summarize these findings and discuss how the approach can be generalized to different data science workflows.

Paper: "Documentation Matters: Human-Centered AI System to Assist Data Science Code Documentation in Computational Notebooks"
April Yi Wang, Dakuo Wang, Jaimie Drozdal, Michael Muller, Soya Park, Justin D. Weisz, Xuye Liu, Lingfei Wu, Casey Dugan
Computational notebooks allow data scientists to express their ideas through a combination of code and documentation. However, data scientists often pay attention only to the code, and neglect creating or updating their documentation during quick iterations. Inspired by human

documentation practices learned from 80 highly-voted Kaggle notebooks, we design and implement Themisto, an automated documentation generation system to explore how human-centered AI systems can support human data scientists in the machine learning code documentation scenario. Themisto facilitates the creation of documentation via three approaches: a deep-learning-based approach to generate documentation for source code, a query-based approach to retrieve online API documentation for source code, and a user prompt approach to nudge users to write documentation. We evaluated Themisto in a within-subjects experiment with 24 data science practitioners, and found that automated documentation generation techniques reduced the time for writing documentation, reminded participants to document code they would have ignored, and improved participants' satisfaction with their computational notebook.

Paper: "Elements of XR Prototyping: Characterizing the Role and Use of Prototypes in Augmented and Virtual Reality Design"
Veronika Krauß, **Michael Nebeling**, Florian Jasche, Alexander Boden
Current research in augmented, virtual, and mixed reality (XR) reveals a lack of tool support for designing and, in particular, prototyping XR applications. While recent tools research is often motivated by studying the requirements of non-technical designers and end-user developers, the perspective of industry practitioners is less well understood. In an interview study with 17 practitioners from different industry sectors working on professional XR projects, we establish the design practices in industry, from early project stages to the final product. To better understand XR design challenges, we characterize the different methods and tools used for prototyping and describe the role and use of key prototypes in the different projects. We extract common elements of XR prototyping, elaborating on the tools and materials used for prototyping and establishing different views on the notion of fidelity. Finally, we highlight key issues for future XR tools research.

Paper: "Experiences of Harm, Healing, and Joy among Black Women and Femmes on Social Media"
Tyler Musgrave, *Alia Cummings*, **Sarita Schoenebeck**
This project illuminates Black women and femme's experiences with unwanted behavior and harassment on social media, and how they (re)claim and transform their experiences to cope, heal, and experience joy. This work situates Black women and femmes' experiences within extant social media research and examines how their unique identity creates multiple forms of interlocking oppression. In our focus groups, participants (N=49) described harms they experienced through racism, misogyny, ableism, and sexual objectification and their complex labor of protecting and transforming their experiences online. Despite the harmful effects of unwanted behavior online, participants described a Black transformative politic, in which they cultivated healing and joy through nurturing relationships and blocking and refusing others. Using a transformative justice lens, we discuss their experiences of harassment from White women and men, as well as the complexities of cultural betrayal trauma when experiencing harassment from Black men.

Paper: “Family as a Third Space for AI Literacies: How do children and parents learn about AI together?”
Stefania Druga, *Fee Lia Christoph*, Amy J Ko
Many families engage daily with artificial intelligence (AI) applications, from conversations with a voice assistant to mobile navigation searches. While there are known ways for youth to learn about AI, we do not yet understand how to engage parents in this process. To explore parents’ roles in helping their children develop AI literacies, we designed 11 learning activities organized into four topics: image classification, object recognition, interaction with voice assistants, and unplugged AI co-design. We conducted a 5-week online in-home study with 18 children (5 to 11 years old) and 16 parents. We identify parents’ most common roles in supporting their children and consider the benefits of parent-child partnerships when learning AI literacies. Finally, we discuss how our different activities supported parents’ roles and present design recommendations for future family-centered AI literacies resources.

Paper: “FlatMagic: Improving Flat Colorization through AI-driven Design for Digital Comic Professionals”
Chuan Yan, *John Joon Young Chung*, Yoon Kiheon, Yotam Gingold, **Eytan Adar,** Sungsoo Ray Hong
Creating digital comics involves multiple stages, some creative and some menial. For example, coloring a comic requires a labor-intensive stage known as 'flatting,' or masking segments of continuous color, as well as creative shading, lighting, and stylization stages. The use of AI can automate the colorization process, but early efforts have revealed limitations---technical and UX---to full automation. Via a formative study of professionals, we identify flatting as a bottleneck and key target of opportunity for human-guided AI-driven automation. Based on this insight, we built FlatMagic, an interactive, AI-driven flat colorization support tool for Photoshop. Our user studies found that using FlatMagic significantly reduced professionals' real and perceived effort versus their current practice. While participants effectively used FlatMagic, we also identified potential constraints in interactions with AI and partially automated workflows. We reflect on implications for comic-focused tools and the benefits and pitfalls of intermediate representations and partial automation in designing human-AI collaboration tools for professionals.

Paper: “ImageExplorer: Multi-Layered Touch Exploration to Encourage Skepticism Towards Imperfect AI-Generated Image Captions”
Jaewook Lee, *Jaylin Herskovitz*, Yi-Hao Peng, **Anhong Guo**
Blind users rely on alternative text (alt-text) to understand an image; however, alt-text is often missing. AI-generated captions are a more scalable alternative, but they often miss crucial details or are completely incorrect, which users may still falsely trust. In this work, we sought to determine how additional information could help users better judge the correctness of AI-generated captions. We developed ImageExplorer, a touch-based multi-layered image exploration system that allows users to explore the spatial layout and information hierarchies of images, and compared it with popular text-based (Facebook) and touch-based (Seeing AI) image exploration systems in a study with 12 blind participants. We found that exploration was generally successful in encouraging skepticism towards imperfect captions. Moreover, many

participants preferred ImageExplorer for its multi-layered and spatial information presentation, and Facebook for its summary and ease of use. Finally, we identify design improvements for effective and explainable image exploration systems for blind users.

Paper: "'It would probably turn into a social faux-pas': Users' and Bystanders' Preferences of Privacy Awareness Mechanisms in Smart Homes
Parth Kirankumar Thakkar, Shijing He, **Shiyu Xu**, Danny Yuxing Huang, Yaxing Yao
The opaque data practices in smart home devices have raised significant privacy concerns for smart home users and bystanders. One way to learn about the data practices is through privacy-related notifications. However, how to deliver these notifications to users and bystanders and increase their awareness of data practices is not clear. We surveyed 136 users and 123 bystanders to understand their preferences of receiving privacy-related notifications in smart homes. We further collected their responses to four mechanisms that improve privacy awareness (e.g., Data Dashboard) as well as their selections of mechanisms in four different scenarios (e.g., friend visiting). Our results showed the pros and cons of each privacy awareness mechanism, e.g., Data Dashboard can help reduce bystanders' dependence on users. We also found some unique benefits of each mechanism (e.g., Ambient Light could provide unobtrusive privacy awareness). We summarized four key design dimensions for future privacy awareness mechanisms design.

Paper: "LGBTQ Persons' Use of Online Spaces to Navigate Conception, Pregnancy, and Pregnancy Loss: An Intersectional Approach"
Nazanin Andalibi, *Ashley Lacombe-Duncan, Lee Roosevelt, Kylie Wojciechowski*, *Cameron Giniel*
Navigating conception, pregnancy, and loss is challenging for lesbian, gay, bisexual, transgender, and queer (LGBTQ) people, who experience stigma due to LGBTQ identity, other identities (e.g., loss), and intersections thereof. We conducted interviews with 17 LGBTQ people with recent pregnancy loss experiences. Taking LGBTQ identity and loss as a starting point, we used an intracategorical intersectional lens to uncover the benefits and challenges of LGBTQ-specific and non-LGBTQ-specific pregnancy and loss-related online spaces. Participants used LGBTQ-specific online spaces to enact individual, interpersonal, and collective resilience. However, those with multiple marginalized identities (e.g., people of color and non-partnered individuals), faced barriers in finding support within LGBTQ-specific spaces compared to those holding privileged identities (e.g., White and married). Non-LGBTQ spaces were beneficial for some informational needs, but not community and emotional needs due to pervasive heteronormativity, cisnormativity, and a perceived need to educate. We conceptualize experiences of exclusion as symbolic annihilation and intersectional invisibility, and discuss clinical implications and design directions.

Paper: "Making Space for Cultural Infrastructure: The Breakdown and Maintenance Work of Independent Movie Theaters During Crisis"
Sam Ankenbauer, **Alex Jiahong Lu**
Independent movie theaters (IMTs) are a part of the cultural infrastructure that offers shared spaces for patron communities to access, share, and engage with cultural artifacts. In light of

the COVID-19 pandemic, IMTs were mandated to shut down, resulting in unanticipated infrastructural breakdown. Drawing insights from a preliminary survey and interviews with staff members from 18 IMTs in the U.S., this paper shows how this breakdown disrupted art and community engagement within patron communities. We investigate the sociotechnical practices of maintaining cultural infrastructure through 1) collaborating with community partners and external stakeholders, 2) screening films through online virtual cinema platforms, and 3) retaining community members through online platforms. Our work highlights the tensions and invisible human labor in this maintenance work. Together, this work intends to foreground cultural infrastructure and discuss how HCI can support and contribute to the design and oft-invisible maintenance of cultural infrastructure.

Paper: "Mindsets Matter: How Beliefs About Facebook Moderate the Association Between Time Spent and Well-Being"
Sindhu Kiranmai Ernala, Moira Burke, Alex Leavitt, **Nicole B Ellison**
"Time spent on platform" is a widely used measure in many studies examining social media use and well-being, yet the current literature presents unresolved findings about the relationship between time on platform and well-being. In this paper, we consider the moderating effect of people's mindsets about social media — whether they think a platform is good or bad for themselves and for society more generally. Combining survey responses from 29,284 participants in 15 countries with server-logged data of Facebook use, we found that when people thought that Facebook was good for them and for society, time spent on the platform was not significantly associated with well-being. Conversely, when they thought Facebook was bad, greater time spent was associated with lower well-being. On average, there was a small, negative correlation between time spent and well-being and the causal direction is not known. Beliefs had a stronger moderating relationship when time-spent measures were self-reported rather than coming from server logs. We discuss potential mechanisms for these results and implications for future research on well-being and social media use.

Paper: "Paper Trail: An Immersive Authoring System for Augmented Reality Instructional Experiences"
Shwetha Rajaram, Michael Nebeling
Prior work has demonstrated augmented reality's benefits to education, but current tools are difficult to integrate with traditional instructional methods. We present Paper Trail, an immersive authoring system designed to explore how to enable instructors to create AR educational experiences, leaving paper at the core of the interaction and enhancing it with various forms of digital media, animations for dynamic illustrations, and clipping masks to guide learning. To inform the system design, we developed five scenarios exploring the benefits that hand-held and head-worn AR can bring to STEM instruction and developed a design space of AR interactions enhancing paper based on these scenarios and prior work. Using the example of an AR physics handout, we assessed the system's potential with PhD-level instructors and its usability with XR design experts. In an elicitation study with high-school teachers, we study how Paper Trail could be used and extended to enable flexible use cases across various domains. We discuss benefits of immersive paper for supporting diverse student needs and challenges for making effective use of AR for learning.

Paper" "Privacy, Surveillance, and Power in the Gig Economy"
Shruti Sannon, Billie Sun, Dan Cosley
This paper addresses calls for more research on privacy in the gig economy across a range of work platforms. To understand privacy risks, behaviors, and consequences from the perspective of workers, we analyzed workers' posts about privacy and surveillance from 12 Reddit forums representing four main types of work (crowdwork, freelancing, ridesharing, and delivery). We found that workers perceive both platform companies and customers as sources of unnecessary and opaque data collection and surveillance that can threaten their privacy, safety, and economic outcomes. Workers also engage in many risk mitigation strategies, including self-protective surveillance behaviors such as video recording themselves and customers, as a costly but necessary response to power imbalances created by surveillance. Based on our multi-platform analysis, we present a guiding set of questions that workers, designers, and researchers can use to assess the privacy implications of current and future gig work platforms.

Paper: "Promptverse: Scalable Generation of Scaffolding Prompts Through Human-AI Hybrid Knowledge Graph Annotation
Yoonjoo Lee, *John Joon Young Chung*, Tae Soo Kim, Jean Y. Song, Juho Kim
Online learners are hugely diverse with varying prior knowledge, but most instructional videos online are created to be one-size-fits-all. Thus, learners may struggle to understand the content by only watching the videos. Providing scaffolding prompts can help learners overcome these struggles through questions and hints that relate different concepts in the videos and elicit meaningful learning. However, serving diverse learners would require a spectrum of scaffolding prompts, which incurs high authoring effort. In this work, we introduce Promptiverse, an approach for generating diverse, multi-turn scaffolding prompts at scale, powered by numerous traversal paths over knowledge graphs. To facilitate the construction of the knowledge graphs, we propose a hybrid human-AI annotation tool, Grannotate. In our study (N=24), participants produced 40 times more on-par quality prompts with higher diversity, through Promptiverse and Grannotate, compared to hand-designed prompts. Promptiverse presents a model for creating diverse and adaptive learning experiences online.

Paper: "Slide-Tone and Tilt-Tone: 1-DOF Haptic Techniques for Conveying Shape Characteristics of Graphs to Blind Users"
Danyang Fan, Alexa F Siu, Wing-Sum A Law, Raymond R Zhen, **Sile O'Modhrain**, Sean Follmer
We increasingly rely on up-to-date, data-driven graphs to understand our environments and make informed decisions. However, many of the methods blind and visually impaired users (BVI) rely on to access data-driven information do not convey important shape-characteristics of graphs, are not refreshable, or are prohibitively expensive. To address these limitations, we introduce two refreshable, 1-DOF audio-haptic interfaces based on haptic cues fundamental to object shape perception. Slide-tone uses finger position with sonification, and Tilt-tone uses fingerpad contact inclination with sonification to provide shape feedback to users. Through formative design workshops (n = 3) and controlled evaluations (n = 8), we found that BVI

participants appreciated the additional shape information, versatility, and reinforced understanding these interfaces provide; and that task accuracy was comparable to using interactive tactile graphics or sonification alone. Our research offers insight into the benefits, limitations, and considerations for adopting these haptic cues into a data visualization context.

Paper: "Solving Separation-of-Concerns Problems in Collaborative Design of Human-AI Systems through Leaky Abstractions"
Hariharan Subramonyam, **Jane Im**, *Colleen Seifert*, **Eytan Adar**
In conventional software development, user experience (UX) designers and engineers collaborate through separation of concerns (SoC): designers create human interface specifications, and engineers build to those specifications. However, we argue that Human-AI systems thwart SoC because human needs must shape the design of the AI interface, the underlying AI sub-components, and training data. How do designers and engineers currently collaborate on AI and UX design? To find out, we interviewed 21 industry professionals (UX researchers, AI engineers, data scientists, and managers) across 14 organizations about their collaborative work practices and associated challenges. We find that hidden information encapsulated by SoC challenges collaboration across design and engineering concerns. Practitioners describe inventing ad-hoc representations exposing low-level design and implementation details (which we characterize as leaky abstractions) to "puncture" SoC and share information across expertise boundaries. We identify how leaky abstractions are employed to collaborate at the AI-UX boundary and formalize a process of creating and using leaky abstractions.

Paper: "Supporting Accessible Data Visualization Through Audio Data Narratives"
Alexa F. Siu, Gene S-H Kim, **Sile O'Modhrain**, Sean Follmer
Online data visualizations play an important role in informing public opinion but are often inaccessible to screen reader users. To address the need for accessible data representations on the web that provide direct, multimodal, and up-to-date access to the data, we investigate audio data narratives –which combine textual descriptions and sonification (the mapping of data to non-speech sounds). We conduct two co-design workshops with screen reader users to define design principles that guide the structure, content, and duration of a data narrative. Based on these principles and relevant auditory processing characteristics, we propose a dynamic programming approach to automatically generate an audio data narrative from a given dataset. We evaluate our approach with 16 screen reader users. Findings show with audio narratives, users gain significantly more insights from the data. Users describe data narratives help them better extract and comprehend the information in both the sonification and description.

Paper: "Technology and the Inward Turn to Faith"
Kentaro Toyama
Digital technology – as artifact, industry, and culture – is increasingly criticized for causing societal harm. This essay suggests that global digital culture has its roots in the European Enlightenment and represents its culmination; enlightenment principles such as reason, science, industrialization, liberty, and secularism arguably see their peak expression in the digital. What is common to these principles is a focus on what is external – objective facts,

material outcomes, and public rumination. While these principles have led to tremendous benefits for much of humanity, it could also be argued that they are at the root of today's problematic outcomes with digital technology, as well. I propose that the ever-external focus of modern liberalism could be countered by a shift in attention toward the internal, that religion and spirituality have a unique and valuable relationship with inner experience, and that greater respect for faith could enable the inward turn that begins to heal the ills of technology.

Paper: "TaleBrush: Sketching Stories with Generative Pretrained Language Models"
John Joon Young Chung, Wooseok Kim, Kang Min Yoo, Hwaran Lee, **Eytan Adar**, Minsuk Chang
While advanced text generation algorithms (e.g., GPT-3) have enabled writers to co-create stories with an AI, guiding the narrative remains a challenge. Existing systems often leverage simple turn-taking between the writer and the AI in story development. However, writers remain unsupported in intuitively understanding the AI's actions or steering the iterative generation. We introduce TaleBrush, a generative story ideation tool that uses line sketching interactions with a GPT-based language model for control and sensemaking of a protagonist's fortune in co-created stories. Our empirical evaluation found our pipeline reliably controls story generation while maintaining the novelty of generated sentences. In a user study with 14 participants with diverse writing experiences, we found participants successfully leveraged sketching to iteratively explore and write stories according to their intentions about the character's fortune while taking inspiration from generated stories. We conclude with a reflection on how sketching interactions can facilitate the iterative human-AI co-creation process.

Paper: "Telling Stories from Computational Notebooks: AI-Assisted Presentation Slides Creation for Presenting Data Science Work"
Chengbo Zheng, Dakuo Wang, **April Yi Wang**, Xiaojuan Ma
Creating presentation slides is a critical but time-consuming task for data scientists. While researchers have proposed many AI techniques to lift data scientists' burden on data preparation and model selection, few have targeted the presentation creation task. Based on the needs identified from a formative study, this paper presents NB2Slides, an AI system that facilitates users to compose presentations of their data science work. NB2Slides uses deep learning methods as well as example-based prompts to generate slides from computational notebooks, and take users' input (e.g., audience background) to structure the slides. NB2Slides also provides an interactive visualization that links the slides with the notebook to help users further edit the slides. A follow-up user evaluation with 12 data scientists shows that participants believed NB2Slides can improve efficiency and reduce the complexity of creating slides. Yet, participants questioned the future of full automation and suggested a human-AI collaboration paradigm.

Paper: "Transitioning Toward Independence: Enhancing Collaborative Self-Management of Children with Type 1 Diabetes"
Yoon Jeong Cha, Arpita Saxena, Alice Wou, *Joyce Lee*, **Mark Newman, and Sun Young Park**

Although child participation is required for successful Type 1 Diabetes (T1D) management, it is challenging because the child's young age and immaturity make it difficult to perform self-care. Thus, parental caregivers are expected to be heavily involved in their child's everyday illness management. Our study aims to investigate how children and parents collaborate to manage T1D and examine how the children become more independent in their self-management through the support of their parents. Through semi-structured interviews with children with T1D and their parents (N=41), our study showed that children's knowledge of illness management and motivation for self-care were crucial for their transition towards independence. Based on these two factors, we identified four types of children's collaboration (i.e., dependent, resistant, eager, and independent) and parents' strategies for supporting their children's independence. We suggest design implications for technologies to support collaborative care by improving children's transition to independent illness management.

Paper: "Trauma-Informed Computing: Towards Safer Technology Experiences for All"
Janet X. Chen, *Allison McDonald*, **Yixin Zou**, Emily Tseng, Kevin A Roundy, Acar Tamersoy, **Florian Schaub**, Thomas Ristenpart, Nicola Dell
Trauma is the physical, emotional, or psychological harm caused by deeply distressing experiences. Research with communities that may experience high rates of trauma has shown that digital technologies can create or exacerbate traumatic experiences. Via three vignettes, we discuss how considering the possible effects of trauma and traumatic stress reactions provides an explanatory lens with new insights into people's technology experiences. Then, we present a framework—trauma-informed computing—in which we adapt and show how to apply six key principles of trauma-informed approaches to computing: safety, trust, peer support, collaboration, enablement, and intersectionality. Through specific examples, we describe how to apply trauma-informed computing in four areas of computing research and practice: user experience research & design, security & privacy, artificial intelligence & machine learning, and organizational culture in tech companies. We conclude by discussing how adopting trauma-informed computing will lead to benefits for all users, not only those experiencing trauma.

Paper: "Trust, Reciprocity, and the Role of Timebanks as Intermediaries: Design Implications for Addressing Healthcare Transportation Barriers"
Tawanna R. Dillahunt, Juan F. Maestre, **Vaishnav Kameswaran**, **Erica Poon,** John Osorio Torres, Mia Gallardo, Samantha E. Rasmussen, Patrick C. Shih, Alice Bagley, Samuel L.A. Young, and **Tiffany C. Veinot**
Millions of Americans forego medical care due to a lack of non-emergency transportation, particularly minorities, older adults, and those who have disabilities or chronic conditions. Our study investigates the potential for using timebanks—community-based voluntary services that encourage exchanges of services for "time dollars" rather than money—in interventions to address healthcare transportation barriers to seed design implications for a future affordable ridesharing platform. In partnership with a timebank and a federally qualified healthcare center (FQHC), 30 participants completed activity packets and 29 of them attended online workshop sessions. Our findings suggest that promoting trust between drivers and riders requires systems

that prioritize safety and reliability; yet, there were discrepancies in the ability of the timebank and FQHC to moderate trust.

Paper: "Understanding People's Experience for Physical Activity Planning and Exploring the Impact of Historical Records on Plan Creation and Execution"
Kefan Xu, **Xinghui Yan**, **Mark W Newman**
Making and executing physical activity plans can help people improve their physical activity levels. However, little is known about how people make physical activity plans in everyday settings and how people can be assisted in creating more successful plans. In this paper, we developed and deployed a mobile app as a probe to investigate the in-the-wild physical activity planning experience for 28 days with 17 participants. Additionally, we explored the impact of presenting successful and unsuccessful planning records on participants' planning behaviors. Based on interviews before, during, and after the deployment, we offer a description of what factors participants considered to fit their exercise plans into their existing routines, as well as factors leading to plan failures and dissatisfaction with planned physical activity. With access to historical records, participants derived insights to improve their plans, including trends in successes and failures. Based on those findings, we discuss the implications for better supporting people to make and execute physical activity plans, including suggestions for incorporating historical records into planning tools.

Paper: "You Complete Me: Human-AI Teams and Complementary Expertise"
Qiaoning Zhang, Matthew L Lee, Scott Carter
People consider recommendations from AI systems in diverse domains ranging from recognizing tumors in medical images to deciding which shoes look cute with an outfit. Implicit in the decision process is the perceived expertise of the AI system. In this paper, we investigate how people trust and rely on an AI assistant that performs with different levels of expertise relative to the person, ranging from completely overlapping expertise to perfectly complementary expertise. Through a series of controlled online lab studies where participants identified objects with the help of an AI assistant, we demonstrate that participants were able to perceive when the assistant was an expert or non-expert within the same task and calibrate their reliance on the AI to improve team performance. We also demonstrate that communicating expertise through the linguistic properties of the explanation text was effective, where embracing language increased reliance and distancing language reduced reliance on AI.

Late-Breaking Work

Paper: "Towards Supporting Intraoperative Coordination and Entrustment in Surgical Faculty-Resident Dyads: Looking Together ≠ Seeing the Same Thing"
Vitaliy Popov, *Xinyue Chen*, *Michael Kemp, Gurjit Sandhu, Taylor Kantor*, *Natalie Mateju*, *Xu Wang*
Laparoscopic surgeries require a high degree of visuo-spatial coordination between attending and resident surgeons. The challenge is intensified when surgeons communicate verbally using visual cues, which easily lead to miscommunication. Most prior work in the space takes a perspective of supporting attending surgeons to give clearer instructions to resident surgeons.

However, in order to achieve intraoperative success, shared understanding, coordination and trust between faculty-resident dyads is essential. Our work focuses on unpacking both attending and resident surgeons' experiences during intraoperative operations, and the challenges they encountered around intraoperative coordination and entrustment. We performed an interview study with 6 attending and 3 resident surgeons. Our preliminary results suggest that attending and resident surgeons have contrasting and complementary views about autonomy, communication and coordination during laparoscopic cholecystectomy surgeries. Taking both surgeons' perspectives into consideration is critical when developing intraoperative support. We also see positive attitudes towards using technologies to capture surgeons' visual attention during live surgeries and using the data to support communication, coordination and instruction both intraoperatively and postoperatively.

Paper: "Characteristics of People Who Engage in Online Harassing Behavior"
Song Mi Lee, Cliff Lampe, *J.J. Prescott*, Sarita Schoenebeck
Conflict in online spaces can often lead to behaviors that may be categorized as "harassment." We asked 307 U.S. adults to self-report if they have ever engaged in aggressive online conflict. Using logistic regressions, we examined what psychosocial characteristics predict which users would report engaging in behaviors that are commonly labeled as "harassment." We found that psychological factors such as impulsivity, reactive aggression, and premeditated aggression distinguish those who never thought of, those who only imagined, and those who carried out harassing behavior. Demographic factors other than age did not have significance, contrary to prior studies. Design interventions that address propensities to perpetrate harassment might reduce harms but also raise ethical and moral concerns about the nature of harassment and disposition towards it.

Paper: "'If Alexa knew the state I was in, it would cry': Older Adults' Perspectives of Voice Assistants for Health"
Robin N. Brewer
AI-powered technologies are increasingly being leveraged in health and care practices for aging populations. However, we lack research about older adults' perceptions of AI-driven health in long-term care settings. This paper investigates older adults' perceptions of how one AI-powered technology, voice assistants, should be used for personal health management. We interviewed 10 older adults living in an assisted living community in the U.S. to explore their values around AI for health. Findings show that they value technologies that generate and share positive and relational health information. We use this emphasis on positive health representations to speculate on a critical refusal of negative health representations. We highlight this preference in contrast to existing deficit-based health tracking technologies for aging and discuss how researchers, developers, and designers can engage in better approaches to AI-driven health for older adults and other historically marginalized populations.

Paper: "Seeking Trustworthy Information on COVID-19: A Qualitative Study with the African American Community"
Junhan Kim, Jana Muhic, Lionel Peter Robert, Sun Young Park

COVID-19 has been known to have a disproportionate impact on African Americans in the United States. Although studies have been conducted on the reasons for this disparity, there has been less focus on how the African American population sought trustworthy health information using technology. This is important because African Americans' mistrust of the medical system has been suggested as a possible reason for the disproportionate impact. Therefore, we conducted interviews with 18 African Americans with chronic conditions to discover what types of challenges they faced while searching for trustworthy information on COVID-19 and the strategies they used to overcome these challenges. We found that participants actively evaluated the credibility of different information sources, searched for first-hand information from people they could relate to, and tried to avoid or reduce media consumption to prevent information overload.

Panels

Panel: "Alexa, Tell Me a Joke!: 'Voice Interfaces are Truly Inclusive'"
Jaisie Sin, Cosmin Munteanu, Jenny Waycott, **Robin N Brewer,** Sergio Sayago, Amanda Lazar, Astrid Weber
Speech and voice interaction is often hailed as a natural form of interaction and thus more inclusive for a larger portion of users. But, how accurate is this claim? In this panel, we challenge existing assumptions that voice and speech interaction is inclusive of diverse users. The goal of this panel is to bring together the broad HCI community to discuss the state of voice interaction for marginalized and vulnerable populations, how inclusive design is considered (or neglected) in current voice interaction design practice, and how to move forward when it comes to designing voice interaction for inclusion and diversity. In particular, we plan to center the discussion on older adults as a representative group of digitally-marginalized populations, especially given that voice interfaces are marketed towards this group, yet often fail to properly include this population in the design of such interfaces.

Panel: "Anti-Racism in Action: A Speculative Design Approach to Reimagining SIGCHI"
Bryan Dosono, **Ihudiya Finda Ogbonnaya-Ogburu**, Yolanda Rankin, Andela Smith, **Kentaro Toyama**
In this interactive panel, a brief introduction by the panelists regarding their stances on race and HCI will be followed by breakout group discussion in which participants will be prompted to ask themselves what anti-racist actions they can take in their workplaces and in HCI work.

Panel: "Fabricate It or Render It? Digital Fabrication vs. Virtual Reality for Creating Objects Instantly"
Mustafa Doga Dogan, Patrick Baudisch, Hrvoje Benko, **Michael Nebeling**, Huaishu Peng, Valkyrie Savage, Stephanie Mueller
In the technical human-computer interaction (HCI) community, two research fields that gained significant popularity in the last decade are digital fabrication and augmented/virtual reality (AR/VR). Although the two fields deal with different technical challenges, both aim for a single end goal: creating "objects" instantly – either by fabricating them physically or rendering them

virtually. In this panel, we will discuss the pros and cons of both approaches, discuss which one may prevail in the future, and what opportunities exist for closer collaboration between researchers from the two research fields.

Panel: "Responsible Language Technologies: Foreseeing and Mitigating Harms"
Su Lin Blodgett, Q. Vera Liao, Alexandra Olteanu, *Rada Mihalcea*, Michael Muller, Morgan Klaus Scheuerman, Chenhao Tan, Qian Yang
As increasingly powerful natural language generation, representation, and understanding models are developed, made available and deployed across numerous downstream applications, many researchers and practitioners have warned about possible adverse impacts. Harmful impacts include but are not limited to disparities in quality-of-service, unequal distribution of resources, erasure, stereotyping and misrepresentation of groups and individuals, they might limit people's agency or affect their well-being. Given that language tasks are often complex, open-ended, and incorporated across a diversity of applications, effectively foreseeing and mitigating such harms has remained an elusive goal. Towards this goal, Natural Language Processing (NLP) literature has only recently started to engage with human-centered perspectives and methods---that are often central to HCI research. In this panel, we bring together researchers with expertise in both NLP and HCI, as well as in issues that pertain to the fairness, transparency, justice, and ethics of computational systems. Our main goals are to explore 1) how to leverage HCI perspectives and methodologies to help foresee potential harms of language technologies and inform their mitigation, 2) synergies between the HCI and the responsible NLP research that can help build common ground, and 3) complement existing efforts to facilitate conversations between the HCI and NLP communities.

Panel: "SIGCHI at 40: Celebrations and Aspirations"
Elizabeth F. Churchill, **Kentaro Toyama,** Tamara Clegg, Jonathan Grudin, Kristina Höök, Daria Loi, Yolanda A. Rankin, Elizabeth Rosenzweig
As SIGCHI turns 40, it is time for us to take stock of the last 40 years, and plan for the decades to come. The SIGCHI Executive Committee brings together panelists spanning diverse backgrounds, experiences, and career stages across the SIGCHI community, each offering a unique perspective on SIGCHI's past, present, and/or future. We will celebrate the strides we have made and foreground the ones we aspire towards.

Student Research Competition

Title: Climate Resiliency Through Data: Managing Stormwater Sewers in Detroit
Jacquelyn Q. Schmidt
Climate change is intensifying weather around the world. In cities like Detroit, USA, larger storms are resulting in widespread flooding and sewer overflows. To adapt to the changing climate, Detroit is modernizing its sewer infrastructure, adding sensors, robotics, and advanced algorithms that have the potential to increase the capacity and adaptability of its sewer system. The water utility is struggling, however, to incorporate these new technologies into its existing user workflows. We have conducted a user study of water operators in Detroit focused on

understanding how they currently visualize and use one of their most critical data sources — weather data. Based on our findings, we have developed a new weather dashboard that minimizes weather data uncertainty by synthesizing multiple sources. This research aims to inform the design of new data interfaces for water operators, and learn best practices for incorporating uncertain data in data-driven decision-making processes.

Sessions

Topic: SIG on Designing for Constructive Conflict
Amanda Baughan, **Ashwin Rajadesingan**, Alexis Hiniker, **Paul Resnick**, Amy Bruckman
Online arguments are an increasingly important and controversial part of modern life. From the spread of political conspiracies to managing relationships while socially distanced, the past several years have stressed the role technology plays in our interactions with one another. And unavoidably, part of maintaining relationships includes managing conflict and disagreements, from who does which chores to who's a better political candidate. This SIG will bring together an interdisciplinary group of designers and researchers to discuss how to design, build, and evaluate systems to support constructive arguments online. We ask: How can online systems support conflict while sustaining and possibly strengthening interpersonal relationships? We will explore these questions in the context of a collaborative literature review across fields relevant to social computing and the psychology of conflict, paired with group discussion on how to design for disagreements.

Courses and Workshops

Topic: Rapid Prototyping for XR
Mark Billinghurst**, Michael Nebeling**
This course teaches principles of rapid prototyping for augmented, virtual, and mixed reality (XR). Participants will learn about low-fidelity prototyping with paper and other physical materials, and digital prototyping including immersive authoring. After an overview of the XR prototyping process and tools, participants will complete a hands-on session using easy-to-use digital authoring tools to create working interactive prototypes that can be run on XR devices. The course is targeted at non-technical audiences including HCI practitioners, user experience researchers, and interaction design professionals and students interested in XR design.

Topic: "Researcher Wellbeing and Best Practices in Emotionally Demanding Research"
Nazanin Andalibi- co organizer: Jessica L Feuston, Arpita Bhattacharya, Naz, Elizabeth Ankrah, Sheena Erete, Mark Handel, Wendy Moncur, Sarah Vieweg, Jed R Brubaker
Human-Computer Interaction (HCI) researchers operate in a variety of contexts, including death, illness, online harassment, and structural oppression and violence, that can be emotionally demanding. Given the many challenges associated with this type of research, HCI scholars have started to discuss practices and strategies for supporting researchers in carrying out emotionally demanding work. Nascent works in this domain call attention to the need for more thoroughly developed guidelines and resources.

In this workshop, we will bring together a group of HCI researchers who conduct emotionally demanding research to discuss self-care principles and strategies related to mental, physical, and emotional wellbeing for conducting this type of work. We will develop a series of best practices, guidelines, and resources for researcher wellbeing that can be distributed to the broader HCI community.

Topic: "Dreaming Disability Justice in HCI"
Cella M Sum, **Rahaf Alharbi**, Franshesca Spektor, Cynthia L Bennett, Christina Harrington, Katta Spiel, Rua Mae Williams
While disability studies and social justice-oriented research is growing in prominence in HCI, these approaches tend to only bring attention to oppression under a single identity axis (e.g. race-only, gender-only, disability-only, etc). Using a single-axis framework neglects to recognize people's complex identities and how ableism overlaps with other forms of oppression including classism, racism, sexism, colonialism, among others. As a result, HCI and assistive technology research may not always attend to the complex lived experiences of disabled people. In this one-day workshop, we position disability justice as a framework that centers the needs and expertise of disabled people towards more equitable HCI and assistive technology research. We will discuss harmful biases in existing research and seek to distill strategies for researchers to better support disabled people in the design (and dismantling) of future technologies.

Topic: "Grand Challenges for Personal Informatics and AI"
Lena Mamykina, Daniel A Epstein, **Predrag Klasnja,** Donna Sprujt-Metz, Joshen Meyer, Mary P Czerwinski, Tim Althoff, Eun Kyoung Choe, Munmun De Choudhury, Brian Y Lim
Increasing availability of personal data opened new possibilities for technologies that support individuals' reflection, increase their self-awareness, and inform their future choices. Personal informatics, chiefly concerned with investigating individuals' engagement with personal data, has become an area of active research within Human-Computer Interaction. However, more recent research has argued that personal informatics solutions often place high demands on individuals and require knowledge, skills, and time for engaging with personal data. New advances in Machine Learning (ML) and Artificial Intelligence (AI) can help to reduce the cognitive burden of personal informatics and identify meaningful trends using analytical engines. Furthermore, introducing ML and AI can enable systems that provide more direct support for action, for example through predictions and recommendations. However, there are many open questions as to the design of personal informatics technologies that incorporate ML and AI. In this workshop, we will bring together an interdisciplinary group of researchers in personal informatics, ML, and AI to outline the design space for intelligent personal informatics solutions and develop an agenda for future research in this area.

Topic: "Investigating Data Work Across Domains: New Perspectives on the Work of Creating Data"
Kathleen H Pine, Claus Bossen, Naja Holten Møllerm Milagros Miceli, **Alex Jiahong Lu**, Yunan Chen, Leah Horgan, Zhaoyuan Su, Gina Neff, Melissa Mazmanian
In the wake of the hype around big data, artificial intelligence, and "data-drivenness," much attention has been paid to developing novel tools to capitalize upon the deluge of data being

recorded and gathered automatically through IT systems. While much of this literature tends to overlook the data itself—sometimes even characterizing it as “data exhaust” that is readily available to be fed into algorithms, which will unlock the insights held within it—a growing body of literature has recently been directed at the (often intensive and skillful) work that goes into creating, collecting, managing, curating, analyzing, interpreting, and communicating data. These investigations detail the practices and processes involved in making data useful and meaningful so that aims of becoming ‘data-driven’ or ‘data-informed’ can become real. Further, In some cases, increased demands for data work have led to the formation of new occupations, whereas at other times data work has been added to the task portfolios of existing occupations and professions, occasionally affecting their core identity. Thus, the evolving forms of data work are requiring individual and organizational resources, new and re-tooled practices and tools, development of new competences and skills, and creation of new functions and roles. While differences exist across the global North and the global South experience of data work, such factors of data production remain paramount even as they exist largely for the benefit of the data-driven system [21, 32]. This one-day workshop will investigate existing and emerging tasks of data work. Further, participants will seek to understand data work as it impacts: individual data workers; occupations tasked with data work (existing and emerging); organizations (e.g. changing their skill-mix and infrastructuring to support data work); and teaching institutions (grappling with incorporation of data work into educational programs). Participants are required to submit a position paper or a case study drawn from their research to be reviewed and accepted by the organizing committee (submissions should be up to four pages in length). Upon acceptance, participants will read each other’s paper, prepare to shortly present and respond to comments by two discussants and other participants. Subsequently, the workshop will focus on developing a set of core processes and tasks as well as an outline of a research agenda for a CHI-perspective on data work in the coming years.

Topic: “Integrating Religion, Faith, and Spirituality in HCI”
Mohammad Rashidujjaman Rifat, Firaz Ahmed Peer, Hawra Rabaan, Nusrat Jahan Mim, Maryam Mustafa, **Kentaro Toyama**, **Robert B Markum**, Elizabeth Buie, Jessica Hammer, Sharifa Sultana, Samar Sabie, Syed Ishtiaque Ahmed
HCI scholarship has not yet fully engaged with faith, religion, and spirituality, even though billions of people around the world are associated with such traditions and belief systems. While a few papers and workshops at CHI have focused on particular religions, broader discussions around religion, interfaith relationships, and computing have been absent from mainstream HCI design concerns. In this workshop, we propose to bring together HCI scholars and practitioners, whose work is associated with various faiths, religions, and spiritual practices to start this important conversation, with a focus on three questions: (a) does secularization in computing marginalize faith-based values? and if so, how? (b) how can HCI design address the unique needs and values of faith-based communities? and (c) how can scholarship and practice in HCI benefit from the integration of faith, religion, and spirituality? We hope to form an HCI community of scholars and practitioners focused on the intersection of faith/spirituality/religion and computing.

Topic: “Novel Challenges of Safety, Security and Privacy in Extended Reality”

Jan Gugenheimer, Wen-Jie Tseng, **Abraham Hani Mhaidli,** Jan Ole Rixen, Mark McGill, **Michael Nebeling,** Mohamed Khamis, **Florian Schaub**, Sanchari Das
Extended Reality (AR/VR/MR) technology is becoming increasingly affordable and capable, becoming ever more interwoven with everyday life. HCI research has focused largely on innovation around XR technology, exploring new use cases and interaction techniques, understanding how this technology is used and appropriated etc. However, equally important is the investigation and consideration of risks posed by such advances, specifically in contributing to new vulnerabilities and attack vectors with regards to security, safety, and privacy that are unique to XR. For example perceptual manipulations in VR, such as redirected walking or haptic retargeting, have been developed to enhance interaction, yet subversive use of such techniques has been demonstrated to unlock new harms, such as redirecting the VR user into a collision. This workshop will convene researchers focused on HCI, XR, Safety, Security, and Privacy, with the intention of exploring safety, privacy, and security challenges of XR technology. With an HCI lens, workshop participants will engage in critical assessment of emerging XR technologies and develop an XR research agenda that integrates research on interaction technologies and techniques with safety, security and privacy research.

Topic: "Outsourcing Artificial Intelligence: Responding to the Reassertion of the Human Element into Automation"
Matthew Iantorno, Olivia Doggett, Priyank Chandra, Julie Yujie Chen, Rosemary Steup, Noopur Raval, Vera Khovanskaya, Laura Lam, **Anubha Singh**, Sarah Rotz, Matt Ratto
Science fiction imaginaries and Silicon Valley innovators have long envisioned a workerless future. However, this industrial ambition has often outpaced technological realities in robotics and artificial intelligence, leading to a reassertion of human skills to cover untenable gaps in autonomous systems. This one-day workshop will invite discussion on this recent retrograde trend toward precarious (and often concealed) human labour across such domains as agriculture, transportation, and caregiving through paper presentations and design activities. Throughout, we will ask how this phenomenon speaks to engineering and design challenges and, subsequently, encourage participants to ideate new cybernetic arrangements that centre the agency and well-being of essential workers.

Topic: "Transparent Practices for Quantitative Empirical Research"
Chat Wacharamanotham, Fumeng Yang, **Xiaoying Pu**, Abhraneel Sarma, Lace Padilla
Transparent research practices enable the research design, materials, analytic methods, and data to be thoroughly evaluated and potentially reproduced. The HCI community has recognized research transparency as one quality aspect of paper submission and review since CHI 2021. This course addresses HCI researchers and students who are already knowledgeable about experiment research design and statistical analysis. Building upon this knowledge, we will present current best practices and tools for increasing research transparency. We will cover relevant concepts and skills in Open Science, frequentist statistics, and Bayesian statistics, and uncertainty visualization. In addition to lectures, there will be hands-on exercises: The course participants will assess transparency practices in excerpts of quantitative reports, interactively explore implications of analytical choices using RStudio Cloud, and discuss their findings in

small groups. In the final session, each participant will choose a case study based on their interest and assess its research transparency together with their classmates and instructors.

Topic: “Triangulating Race, Capital, and Technology”
Rachel Kuo, *Yuchen Chen,* **Cindy Kaylying Lin**, Seyram Avle
This workshop transnationally triangulates race, capital, and technology to understand how colonialism and imperialism linger and mutate across various sites and scales. Furthermore, it brings together transnational HCI work that engages with critical ethnic studies as well as postcolonial and decolonial studies to intervene on the field's long-standing epistemology and site focus on the West and fixation on the nation-state at large. Attention to colonial residual, geopolitical tensions, and historical specificities brings HCI in conversation with geopolitical shifts and their very real impacts on the practice and theory of technology design, while troubling the presumptions of who “gets to be human” in HCI. We invite papers and presentations that seek to: 1) triangulate sites of study; 2) draw from different disciplines, theoretical approaches, and methodologies; and 3) engage themes of transnational capital, race, and technology.