CHI 2009
DIGITAL LIFE NEW WORLD

Conference Program

April 4-9, 2009 in Boston, USA

The 27th Annual CHI Conference
on Human Factors in Computing Systems

Association for Computing Machinery

SIGCHI

2009 Conference at a Glance

SUN	18:00–21:30 19:00–20:30	Course 7 HCI History: Trajectories Into the Future Room 206	Course 1 Evaluating User Efficiency Room 207

		Ballroom A	Ballroom B	Ballroom C	Room 302	Room 304	Room 306	Room 309	Room 310
MONDAY	8:30–10:30	Opening Plenary Judith Olson - Even Small Distance Matters: Social Ergonomics in Collocated and Remote Teams CHI MADNESS							
	11:30–13:00	Papers/Note Designing for Other Cultures	Panel Creativity, Challenges, and Opportunities in Social Computing	Paper Understanding Information	Papers/Notes Expertise People Finding	Papers/Notes Design Methods	Papers Navigation	Papers Aesthetics	SIG Driving User Centered Design into IT Organizations...
	14:30–16:00	Papers/Notes Online Relationships	Panels What Can User Experience Learn from Food Design	Papers/Notes Robots	Papers Education and Science	Papers Personal Information Management	Papers Clicking on Buttons	Invited Discussion Real Life and Real Work: Real Experiences...	SIG End User Software Engineering
	16:30–18:00	Papers Sustainability 1	Design Community Jan Chipchase - Designing for Global Impact	Papers/Notes Accessibility/ Special Needs	Papers/Notes Creative Thought and Self-Improvement Use	Papers Telepresence and Online Media	Papers/Notes Learning Challenges	Panels Growing up Programming...	SIG Designing for Families
TUESDAY	8:15–9:00	CHI MADNESS							
	9:00–10:30	Papers/Notes Non-traditional Interaction Techniques	Panels Mobile Technologies for the World's Children	Papers Computer Mediated Communication 1	Papers In the Living Room	Papers Information Foraging	Papers/Notes Prototyping and Interaction	Papers Understanding UI 1	Engineering Community Forum
	11:30–13:00	Papers User Experience	Paper + Invited Panel Scientometric Analysis of the CHI Proceedings	Papers Cross Culture CMC	Papers In the Home	Papers Q&A Systems	Papers Looking at Videos		SIG Integrating User Experience into Free/Libre/Open Source Software
	14:30–16:00	Papers/Notes Security	Paper + Invited Panel The Status of Ethnography in Systems Design	Papers Programming Tools and Architectures	Papers/Notes Techniques for Mobile Interaction	Papers Social Networking Sites	Papers Software Developers and Programmers	Design Community Forum	SIG Usable Intelligent Interactive Systems
	16:30–18:00	Papers Tabletop Gestures	Engineering Community User Experience in Open Source	Papers Sustainability 2	Papers/Notes Visualization 1	Papers Design Theory	Papers New Media Experiences 1	Panels Figuring out the "One Thing" that...	SIG Overcoming Challenges in Mobile UX...
WEDNESDAY	8:15–9:00	CHI MADNESS							
	9:00–10:30	Papers/Notes Using Tabletops for Education, Science, and Media	Panels Fault Lines of User Experience	Papers Classifying and Recommending Content	Papers/Notes Helping Out Users with "Extreme Jobs"	Papers Visualization 2	Papers/Notes User Studies and Design	Papers Cognitive Modeling and Assessment	SIG Agile User Experience
	11:30–13:00	Papers New Media Experiences 2	Paper + Invited Panel The Beauty Dilemma	Papers/Notes Pointing and Cursor Techniques	Papers/ Notes Personal and Online Information	Papers/Notes Studying Wikipedia	Papers /Notes Multimodal Mobile Interaction		SIG Designing user interfaces for multi-touch and gesture devices
	14:30–16:00	Papers Usability Methods	Panels Interacting with Health	Papers Software Development	Papers Studying Cell Phone Use	Papers /Notes Desktop Techniques	Papers Designing for Senior Citizens		SIG Design and Adoption of Social Collaboration within Businesses
	16:30–18:00	Papers/Notes Social Search and Sensemaking	Design Community Designing for Discovery	Papers Mobile Applications for the Developing World	Papers Understanding UI 2	Papers Supporting Blind Users	Papers Advanced Web Scenarios		User Experience Community Forum
THURSDAY	8:15–9:00	CHI MADNESS							
	9:00–10:30	Papers Technology for Museums	Panels Eek! A Mouse!	Papers New Mobile Interactions	Papers Security and Privacy	Papers/Notes Web Searching and Browsing	Papers Hospitals	Student Research Competition	SIG User Experience Evaluation – Do You Know Which Method to Use?
	11:30–13:00	Papers/Note Tabletops and Single Display Groupware	Design Community Designing for Collaboration	Papers Studying Intelligent Systems	Papers/Notes Systems for Children	Papers/Notes New Input Modalities	Papers Reflecting on Design	Student Design Competition	SIG Research Ethics in the Facebook Era: privacy, anonymity and the IRB
	14:30–16:00				Papers Gesture UIs	Papers Understanding Graphs	Papers/Notes Computer Mediated Communication 2		SIG API Usability
	16:30–18:00	Closing Plenary Kees (C.J.) Overbeeke - Dreaming of the impossible							

18:00–21:30 19:00–20:30	Course 25 Beyond Beta: Inspiring Long-Term Thinking About Interactive Technology with Envisioning Cards Room 208	Course 2 Human-Computer Interaction: Introduction and Overview Room 210	SUN

	Room 311	Room 312	Room 206	Room 207	Room 208	Room 210	Commons/Hall D	Special Events	
8:30–10:30							Conference Reception & Exhibits Grand Opening 18:30–21:00		MONDAY
11:30–13:00	Papers New Tabletop Input and Output Methods	Interactivity Touch and Feel	Course 6 Drawing Ideas: Hand-generated Sketching for Interaction Design	Course 3 Giving Children a Voice in the Design of Technology: Methods and Strategies	Course 4 Innovations in Card Sorting: A Hands-on Approach	Course 5 Avoiding We can't change THAT!: An Introduction to Usability & Software Architecture			
14:30–16:00	Papers/Notes Privacy and Trust	Case Studies Specific User Populations							
16:30–18:00	Papers Tangibles on Tables	alt.chi Feel the Love, Love the Feel		Course 26 Top Field Interviewing Mistakes...	Course 8 Addressing Value Tensions During The Design Process	Course 9 The Psychological Basis for UI Design Rules			
8:15–9:00							Exhibits, Interactivity, & Info Booth 10:30–18:00	Spotlight on Work-in-Progress Posters (#1–95) 10:30–11:30 Hall C Job Fair 18:00–20:00 Commons Video Showcase 18:30–20:00 Ballroom A/B Design Vignette Demos 19:30–21:00 Room 302	TUESDAY
9:00–10:30	19:30–21:00 Room 302 Papers Metrics	Design Community Events Designing for Behavior	Course 13 Web Design for Usability	Course 10 Understanding Users in Context: Fieldwork in User-Centered Design		Course 12 Empirical Research Methods for Human-Computer Interaction			
11:30–13:00	Papers Art Creation	Interactivity On the Table							
14:30–16:00	Papers/Notes Large Displays/ Multi-Display Environments	Case Studies New Usability Metrics and Methods				Course 14 Building Affinity Diagrams to Reveal User Needs and Engage Stakeholders			
16:30–18:00	Design Community Events Designing for Expression	alt.chi Life, Love, Death							
8:15–9:00							Exhibits, Interactivity, & Info Booth 10:30–18:00	Spotlight on Work-in-Progress Posters (#96-192) 10:30–11:30 Hall C SIGCHI Membership Meeting 18:10–19:10 Room 310 Hospitality Events 18:30–20:30 Boston Marriott Copley Place	WEDNESDAY
9:00–10:30	Papers Finding Info Online	Design Community Design Panel Discussion with Malcolm McCullough	Course 18 Developing Visual Models that Can Lead to Design Implications	Course 15 Beyond Anecdotes: Analyzing Qualitative Data from Field Studies	Course 16 3D User Interfaces: Design, Implementation, Usability	Course 17 Mobile Interaction Design			
11:30–13:00	Papers New Gaming Experiences	Interactivity Look, Hear, Wear							
14:30–16:00	Papers/Notes Photos and Life Logging	Case Studies Tools for UX Researchers				Course 19 Tips and Techniques for Measuring the User Experience			
16:30–18:00	Papers/Notes Enhancing Reality	alt.chi Build a Better World				Course 20 Working with an Agile Team: The User Feedback...			
8:15–9:00							Exhibits, Interactivity, & Info Booth 10:30–14:30	Spotlight on Student Design and Research Competitions, Doctoral Consortium, and Workshops Posters 10:30–11:30 Hall C	THURSDAY
9:00–10:30	Papers/Notes Social Software in Office	Case Studies New Technologies and Interactions	Course 24 Ajax - Design and Usability	Course 21 New Paradigms for Adaptive Interaction		Course 23 Leading Innovation Workshops: Aligning Cross-Functional Teams around Breakthrough Ideas			
11:30–13:00	Papers/Notes Tactile UI	Case Studies Experience With Software and System...							
14:30–16:00	Papers Informed Design	alt.chi Method in the Madness	Course 28 Designing a Task-Focused Conceptual Model			Course 27 Designing for the Scent of Information...			
16:30–18:00									

Welcome to CHI 2009!

CHI is where the latest advances and information on computer-human interaction can be found. CHI is a community experience where people learn, discuss, share and interact with each other. The CHI community is diverse with many different disciplines and a wide range of interests from research to practice. We have tried to provide a full program of many different venues and activities rich with opportunities to discover.

CHI 2009 continues its four day format. However, we once again have record numbers of submissions in all categories. Hundreds of people have devoted thousands of hours in reviewing and selecting those pieces of work that will be presented here. The increased number of submissions means that there are many more presentations to be packed into four days.

Our theme this year is **Digital Life – New World.** As the cost of basic computing drops it becomes economically feasible for computing devices to enter many more parts of human life. This digital presence in everyday life poses new challenges in research, design and creativity. When computing is part of life rather than isolated on a desk, the human challenges loom much larger. As these human challenges are met, technology will influence and shape culture and society. It will literally be a new world. We see this as an exciting opportunity and hope that you will find both answers and questions here at CHI 2009.

One of our new venues this year is the video showcase. This provides an opportunity for many different kinds of design, innovation, opinion and futurism to be presented to the community. We hope you will come to our theater, grab some popcorn and enjoy the show.

Boston is a great location for CHI. It is one of the early hubs of the historic New World. It is a place where people came in hopes of building new lives for themselves by finding new opportunities. It is also a place where revolutions began and people sought to choose for themselves how they would be governed. Boston has been the home of innovation across most of the history of computer science. X-Windows was born here. Enjoy the town, its culture and history while sharing this conference with us.

Enjoy!

Dan Olsen
Conference Chair

Ken Hinckley & Meredith Ringel Morris
Technical Program Chairs

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Conference Committee

CHI 2009 ORGANIZING COMMITTEE

Conference Chair
Dan R. Olsen Jr., *Brigham Young University*

Conference Chair Assistant
Richard B. Arthur, *Brigham Young University*

Panels
Beth Mynatt, *Georgia Tech*

Student Volunteers
Nicolai Marquardt, *University of Calgary*
Sara Drenner, *University of Minnesota*

TECHNICAL PROGRAM

Chair
Ken Hinckley, *Microsoft Research*
Meredith Ringel Morris, *Microsoft Research*

Chair Assistant
Morgan Dixon, *University of Washington*

Papers
Scott Hudson, *Carnegie Mellon University*
Saul Greenberg, *University of Calgary*

Courses
Steven Poltrock, *The Boeing Company*
Garett Dworman, *Tec-Ed, Inc.*

Interactivity
Gonzalo Ramos, *Microsoft Live Labs Research*
Anastasia Bezerianos, *NICTA & École Centrale Paris*

Doctoral Consortium
Bonnie John, *Carnegie Mellon*
Gilbert Cockton, *University of Sunderland*, England

Workshops
Robert J.K. Jacob, *Tufts University*
Mark Handel, *The Boeing Company*
Tara Matthews, *IBM Research*

Works in Progress
Carl Gutwin, *University of Saskatchewan*
Regan Mandryk,*University of Saskatchewan*

Student Design Competition
Jon Kolko, *frog design*
Mike Glaser, *Drexel University*

Student Research Competition
Rob Miller, *Massachusetts Institute of Technology*
Joanna McGrenere, *University of British Columbia*

alt.chi
Azam Khan, *Autodesk Research*
Tovi Grossman, *Autodesk Research*

alt.chi Webmaster
Michael Glueck, *Autodesk Research*

Special Interest Groups
Jeff Pierce, *IBM Research*
James Lin, *IBM Research*

Video Showcase
Ed H. Chi, *PARC*

Madness
Jeff Nichols, *IBM Research*
Mira Dontcheva, *Adobe Systems, Inc.*

COMMUNITIES

Design
Robert Fabricant, *frog design*
Anijo Mathew, *IIT Institute of Design*
Mark Baskinger, *Carnegie Mellon University*

User Experience and Usability
Susan Dray, *Dray & Associates, Inc.*
Arnold "Arnie" Lund, *Microsoft Corporation*
Chauncey Wilson, *Autodesk, Inc.*
Elizabeth Buie, *Luminanze Consulting, LLC*

Engineering
Bonnie John, *Carnegie Mellon University*
Scooter Morris, *University of California*, San Francisco

MAKING THINGS HAPPEN

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Oscar Murillo, *Microsoft Corporation*
Chris Jeongeon Kim, *HSBC Group*

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Tessa A. Lau, *IBM Research*
Eben Haber, *IBM Research*

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Scooter Morris, *University of California, San Francisco*
Richie Hazelwood, *Indiana University*

Proceedings
Bongshin Lee, *Microsoft Research*
Nathalie Henry, *Microsoft Research*

Sponsors & Exhibitors
Carol Klyver, *Foundations of Excellence*

CMC Liaison
Gerrit van der Veer, *Open University Netherlands*

ACM Staff Liaison
Brooke Hardy, *ACM*

Conference Logistics
Janeé Pelletier, *C&LC*

Registration
Yvonne Lopez, *Executive Events*

Hot design... Cool place to work

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We are proud to be a Champion Sponsor of CHI.

Join us! We're looking for:

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- User Research Leads and Managers

http://www.autodesk.com/careers

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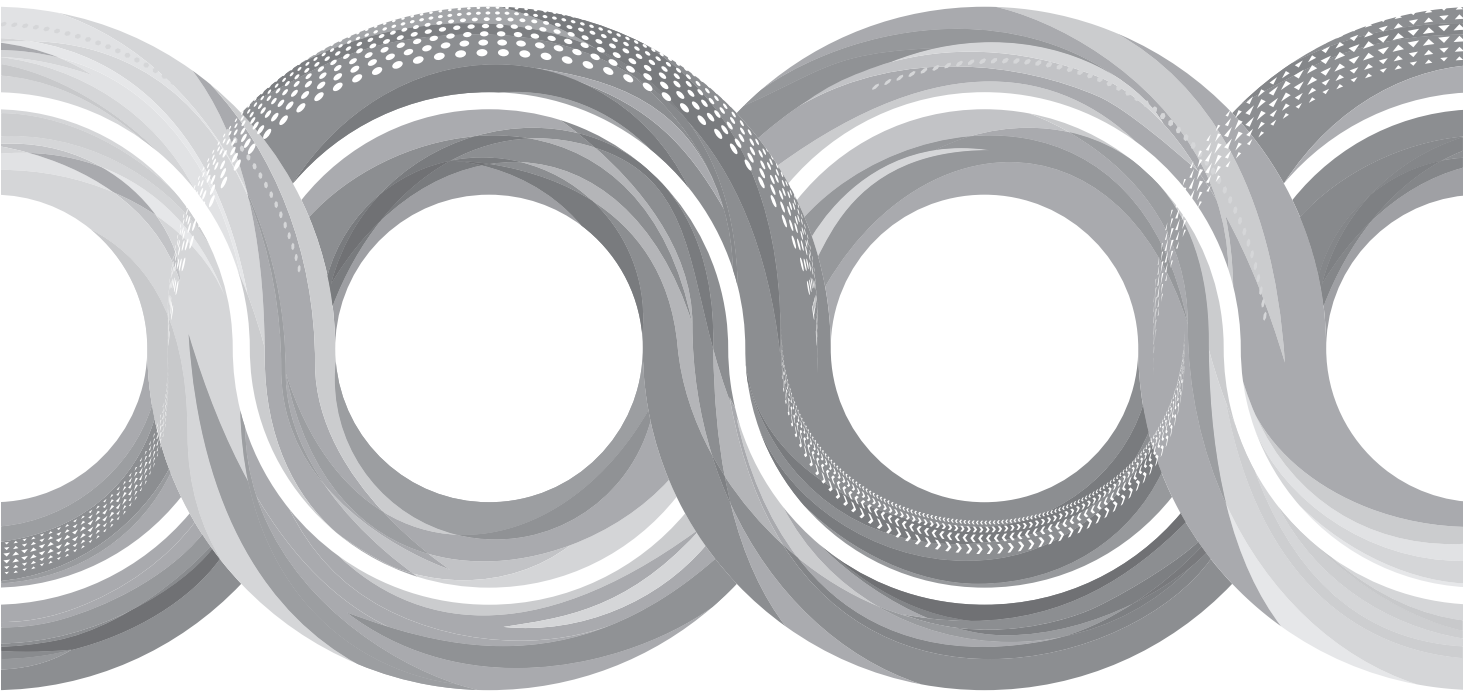

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CHI09BOSTON

Booth 43 & 44

Stop by for a chance to win a ZUNE and other MS products, meet US and get your invitation to the Hospitality event Wednesday night April 8th 7:30 – 8:30pm

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April 10 - 15, 2010

CHI 2010

we are HCI

Come to Atlanta, GA for the 28th annual CHI conference, the premier international forum for all aspects of human-computer interaction.

Notes

General Information

ACM SIGCHI

CHI 2009 is sponsored by ACM's Special Interest Group on Computer-Human Interaction (ACM SIGCHI). ACM, the Association for Computing Machinery, is an educational and scientific society uniting the world's computing educators, researchers, and professionals to inspire dialogue, share resources, and address the field's challenges. ACM strengthens the profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking. ACM offers its more than 87,000 worldwide members cutting edge technical information through world class journals and magazines, dynamic special interest groups, and globally recognized conferences. Visit www.acm.org for more information about the ACM.

SIGCHI is the premier international society for professionals, academics, and students who are interested in human technology and human-computer interaction (HCI). We provide a forum for the discussion of all aspects of HCI through our conferences, including our flagship CHI conference, publications, web sites, email discussion groups, and other services. We advance education in HCI through courses, workshops, and outreach, and we promote informal access to a wide range of individuals and organizations involved in HCI. Members can be involved in HCI-related activities with others in their region through local SIGCHI chapters.

Come to our membership meeting on Wednesday at 18:10 in Room 310, or visit www.sigchi.org to learn more about SIGCHI.

Membership Information

Please contact ACM's Member Services Department

Online: www.acm.org

Tel: +1-800-342-6626 (USA/Canada)
+1-212-626-0500 (International)

Fax: +1-212-944-1318

Email: acmhelp@acm.org

Write: Association for Computing Machinery, Inc.
General Post Office
P.O. Box 30777
New York, NY 10087-0777
USA

CHI 2009 OVERVIEW

The CHI 2009 technical program showcases presentations of outstanding research in human-computer interaction (HCI), demonstrations of new and innovative technology, discussion of timely and controversial issues, and presentations of the latest developments in HCI design and practice.

PRE-CONFERENCE | SATURDAY & SUNDAY (BY INVITATION ONLY)

Doctoral Consortium

Room 300

The Doctoral Consortium provides an opportunity for invited doctoral students to explore their research interests in an interdisciplinary workshop with other students and a group of experienced researchers. Posters displaying the Doctoral Consortium participants' work will be on display in the Poster Area in Exhibit Hall C. Brief descriptions of each poster can also be found in the CHI 2009 Extended Abstracts.

Doctoral Consortium Faculty:

Gilbert Cockton, *University of Sunderland*, UK (Co-Chair)
Bonnie John, *Carnegie Mellon University*, USA (Co-Chair)
Barrie Brown, *University of California, San Diego*, USA
A.J. Bernheim Brush, *Microsoft Research*, USA
Antti Oulasvirta, *Helsinki Institute for Information Technology HIIT*, Finland
Alonso Vera, *NASA Ames Research Center*, USA

Workshops

Workshops provide a valuable opportunity for small communities of people with diverse perspective to engage in rich one- and two-day discussions about a topic of common interest. Workshop participants are pre-selected based on submitted position papers, and results will be summarized and displayed as posters in the Poster Area in Exhibit Hall C.

TECHNICAL PROGRAM | MONDAY — THURSDAY

The CHI technical program includes presentations in multiple formats.

Choosing and Attending Sessions

With so many exciting opportunities happening at once, how do you choose? CHI 2009 has put some resources in place to help you make the most of your conference experience:

1. The CHI 2009 Conference Proceedings and Extended Abstracts contain information about each presentation. Additional copies of the proceedings, in both print and digital format, are available for sale at the Registration Desk.
2. Conference volunteers are also available to answer any questions you may have.
3. To help you decide how to spend your time during the day, each morning we present CHI Madness, a fast-paced overview of many of the presentations of the day. If you plan to leave during the middle of a session, please be considerate of the speakers and others around you by taking a seat near an exit. Similarly, if you plan to stay for the entire session, please move up to the front and center of the room. Presenters and other attendees will appreciate this.

CHI Madness (25 sec presentations)

At the beginning of each day, presenters give a fast-paced overview of the day's program.

Human-Computer Interaction Archive

Archival papers and notes document work that makes a lasting and significant contribution to our knowledge and understanding of human-computer interaction.

CHI Papers (30 min presentations)

CHI Papers present significant contributions to research, development, and practice in all areas of the field of humancomputer interaction. All accepted papers were rigorously reviewed. Papers in the CHI Proceedings are read and cited worldwide and have a wide impact on the development of HCI principles, theories, techniques, and practical application.

CHI Notes (15 min presentations)

Introduced in 2006, CHI Notes is modeled on the successful UIST TechNotes and CSCW Notes categories. CHI Notes are briefer and more focused than CHI Papers, but follow the same strenuous review process. The goal of CHI Notes is to increase diversity of the fully-reviewed technical program by encouraging submissions that might not fit well within the traditional CHI Papers program.

TOCHI Papers (30 min presentations)

This year, for the first time, papers from the journal ACM Transactions on Computer-Human Interaction, will be presented orally at CHI. Authors of papers that were published in TOCHI's 2008 volume have the opportunity to share their work with you here at CHI. TOCHI papers are intermingled with CHI Papers and Notes, to create themed sessions.

Contemporary Trends

Contemporary Trends provoke, intrigue, and inspire the CHI audience. These submissions record the history of HCI practice.

Courses (one to four 90 min units)

The goal of Courses is to provide professional development opportunities to existing or prospective HCI community members. Courses are strictly limited and pre-registration is required; the Course notes you receive at registration will serve as your entry ticket. You may register for courses that have not yet been filled at the registration desk in the Concourse.

Case Studies (30 min presentations)

Case Studies provide researchers and practitioners a venue to present empirical inquiries that investigate particular phenomena within a real-world context. Case Studies are discussions of the practice of HCI based on real world experience, described and generalized in a way to be of interest to and instructive to other members of the community.

Panels (90 min sessions)

Panels allow audience members to understand and interact with different perspectives on an emerging or controversial topic. These sessions stimulate thought and discussion about contemporary trends of interest to the community. Panels are varied in their structure and mechanisms for interaction but all provide considerable time and attention for collecting and responding to audience concerns. In addition to standard panels, this year there are also three "paper + invited panel" sessions, which will begin with a 30-minute presentation of a CHI paper on a particularly timely or controversial topic, followed by a 60-minute panel discussion regarding the points raised in the paper.

Special Interest Groups (SIGs) (90 min sessions)

Special Interest Groups (SIGs) enable conference attendees who share similar interests to meet for 90 minutes of facilitated discussion.

alt.chi (15 min presentations)

alt.chi opens the conference up for unusual, challenging, and thought-provoking work that might not otherwise be seen. alt.chi is a place to experiment with how CHI submissions are presented, submitted, reviewed, and selected. These sessions allow the controversial, hard to publish, and/or alternative perspectives on HCI to express themselves in a format that encourages lively audience participation.

Community Events (presentation length varies)

Community events sessions offer a variety of panels, talks, and presentations from practitioners and researchers at the forefront of their respective communities. Community-oriented panel discussions and invited talks are 90 minutes in length, while presentations from the "Design Methods" and "Design Practice" venues are between 15 – 30 minutes in length.

Video Showcase (90 min sessions)

New this year, the Video Showcase will be held on Tuesday evening, from 18:30 – 20:00 in Ballrooms A & B. At this event, the audience will enjoy 25 videos, showcasing new systems, interaction techniques, and methods.

Demos and Posters

Interactivity (hands-on demonstrations and 15 min presentations)

Experience human-computer interaction for yourself at the Interactivity displays in the Exhibit Hall. These presentations are hands-on demonstrations that push the boundaries of tangible, multimodal, collaborative, and multimedia interfaces. They will be available during the Exhibits Grand Opening at the conference reception on Monday night, and throughout the rest of the week. Interactivity participants will also describe their research in scheduled conference sessions on Monday. Interactivity demos will be in Exhibit Hall D on Monday through Wednesday from 14:30 – 18:00, as well as during the Conference reception on Monday evening.

Work-in-Progress (posters)

The Work-in-Progress posters offer a great venue to show exciting new work that is in an early stage and can benefit from discussion with colleagues. We encourage practitioners and researchers to visit the Work-in-Progress posters to see new work, provide feedback and engage in discussions and collaborations. Work-in-Progress posters will be displayed in the poster area of Exhibit Hall C, in two groups: group 1 posters will be available for viewing on Monday and Tuesday, and group 2 posters will be available for viewing on Wednesday and Thursday. Work-in-Progress authors will be available near their posters during the "spotlight on posters" coffee breaks (Tuesday morning for group 1, and Wednesday morning for group 2).

Design Vignettes (hands-on demonstrations)

Design Vignettes are a new venue at CHI this year, showcasing innovative and progressive ideas from the Design Community that are suitable for presentation in demos that engage the audience. Design Vignettes demos will be shown in Room 302 from 19:30 – 21:00 on Tuesday evening.

Competitions

Student Design Competition (posters and 20 min presentations)

This year's Student Design Competition (SDC) problem was to design an object, interface, or system intended to support the idea of utilizing or consuming local resources rather than global resources, in a sustainable and environmentally efficient manner. All CHI 2009 Student Design Competition entries will be displayed as posters in the Poster Area of Exhibit Hall C. SDC judges will select four finalists to present their work in a special SDC session on Thursday morning. See if you can guess the winners, who will be announced at the end of the Closing Plenary on Thursday!

Student Research Competition (posters and 20 min presentations)

The Student Research Competition provides a forum for undergraduates and graduate students to share their research results, exchange ideas, and improve their communication skills, while competing for prizes. The CHI competition is a branch of a broader ACM Student Research Competition sponsored by Microsoft Research. Student Research Competition entries will be displayed as posters in the Poster Area in Exhibit Hall C, and finalists will present their work in a conference session on Thursday morning. Winners will be announced at the Closing Plenary on Thursday.

SPECIAL EVENTS

CONFERENCE RECEPTION & EXHIBITS GRAND OPENING

The Commons (Exhibit Hall D)
Monday, 18:30 – 21:00

To celebrate CHI 2009 and the wonderful city of Boston, we are kicking off the conference with an old-time carnival. Ladies and gentlemen, step right up to test your strength with the High Striker! Compete with your friends for the fastest pitch with our Baseball Toss! Ring-the-Bottle and Toss-the-Frog for bragging rights!

Visit our exhibitors during the reception for a chance to spin the big Prize Wheel. You will also have a chance to visit our interactivity authors. Admission to the opening reception is included with your conference registration; additional tickets may be purchased for $70 each at the Registration Desk. *Tickets will not be available at the door.*

JOB FAIR

The Commons (Exhibit Hall D)
Tuesday, 18:00 – 20:00

CHI 2009 is featuring a Job Fair on Tuesday evening. Recruiters and job candidates are invited to take advantage of this key event. Visit the Recruiting Boards and designated exhibit booths throughout the conference to find out more about available positions.

CHI Champion Recruiters:

Autodesk, Inc. (exhibiting)
Microsoft Corp. (exhibiting)

CHI Contributor Recruiters:

HP Labs

Other Recruiters:

Bestica, Inc. (exhibiting)
Bloomberg L.P. (exhibiting)
Citrix Systems
Oracle, Inc. (exhibiting)

ACM SIGCHI MEMBER MEETING

Room 310
Wednesday, 18:10 – 19:30

SIGCHI officers will present ongoing programs and activities, followed by an audience Q&A session. Participants interested in shaping SIGCHI's future are encouraged to attend.

HOSPITALITY EVENTS

Wednesday Evening

CHI Champions:

Google, Inc. (18:30 – 20:30)
Boston Marriott Copley Place
110 Huntington Ave.

Microsoft Corp. (19:30 – 20:30)
Boston Marriott Copley Place
110 Huntington Ave

VENUE INFORMATION

INTERNET ACCESS

As you may have noticed, there is wireless internet access throughout the Hynes Convention Center. This service is supplied by the Boston Convention & Exhibition Corporation.

Wireless high-speed internet access for your laptop is being provided in the internet café area of Hall C by CHI 2009. We encourage you to visit the Internet Café to jump online and informally chat with colleagues in a relaxed environment. Please be considerate of your colleagues and limit your time spent online. Hard wire connections and computers are not provided. If your laptop does not have wireless capability, you will need to access the internet through your hotel guest room.

REGISTRATION

Hynes Convention Center, Level Two, Outside Hall C

The CHI 2009 Registration area is located on the second floor level of the Hynes Convention Center, outside of Hall C. Pre-registered participants must pick up their badges and conference materials in this area. On-site registration for the conference and courses (subject to space availability) is located here as well.

Registration Hours:

Sunday	7:30 – 12:00
Sunday	7:30 – 17:30
Monday	8:00 – 21:30
Tuesday	8:00 – 17:30
Wednesday	8:00 – 17:30
Thursday	8:00 – 16:30

THE COMMONS

Inside Hall D, Second Floor, Hynes Convention Center

The Commons is a large central area that is the site for all main conference breaks, exhibits, posters, and other interactive activities. Seating areas make The Commons the perfect place to meet with old or new friends, enjoy a refreshing beverage during a coffee break, or just relax between sessions.

Commons Hours:

Monday	18:30 – 21:00 (Opening Reception)
Tuesday	10:30 – 18:00 (Job Fair 18:00 – 20:00)
Wednesday	10:30 – 18:00
Thursday	10:30 – 14:30

COFFEE BREAKS

Regularly scheduled morning and afternoon coffee breaks are complimentary for all registered CHI 2009 delegates. The coffee break schedule is as follows:

Monday
10:30 – 11:30: Hall C, near Internet Café
16:00 – 16:30: Hall C, near Internet Café

Tuesday
10:30 – 11:30: Hall D, inside Exhibit Hall
16:00 – 16:30: Hall D, inside Exhibit Hall

Wednesday
10:30 – 11:30: Hall D, inside Exhibit Hall
16:00 – 16:30: Hall D, inside Exhibit Hall

Thursday
10:30 – 11:30: Hall D, inside Exhibit Hall
16:00 – 16:30: Hall D, inside Exhibit Hall

CHI MERCHANDISE

Conference t-shirts, water bottles, publications, videos and CDs will be available at the Registration Desk outside Hall C. The CHI Store opens at 12:00 on Monday and will be open during registration hours.

The CHI Information Booth in the Commons is staffed by CHI Local Members and Student Volunteers who can answer your CHI 2009 questions and assist with recruiting and special needs.

CHI INFORMATION BOOTH

The Commons (Exhibit Hall D)

The info booth is staffed by local CHI Members and Student Volunteers who can answer your CHI 2009 questions and assist with recruiting

CHI Information Booth Hours:

Monday:	18:30 – 21:00
Tuesday	10:30 – 18:00 (Job Fair 18:00 – 20:00)
Wednesday	10:30 – 18:00
Thursday:	10:30 – 14:30

During other times, participants may stop by the registration desk for conference information.

STUDENT VOLUNTEERS

Student Volunteers are a great source of information about the conference. They help give the conference a friendly, helpful face and work hard to assist during the whole conference. Many are working on their Masters or Ph.D.s and some are looking for job or internship opportunities. Please be courteous to them and feel free to ask them questions. You can identify Student Volunteers by their bright red t-shirts.

INTERNATIONAL RELATIONS

CHI 2009 welcomes participants from around the world. Please visit the CHI Information Booth in the Commons or see the registration desk if you have any questions about the conference.

SPECIAL NEEDS

Any special requirements you may need should be relayed to the CHI Information Booth in the Commons or the registration desk at the earliest time possible. All CHI 2009 meeting space at the Hynes Convention Center has elevators, restrooms, concessions and telephones designed to accommodate the needs of those with physical impairments. Meeting rooms may be equipped with services for the hearing impaired upon request, dependent upon the Center's inventory.

RECRUITING BOARDS
The Commons (Exhibit Hall D)

Please check the recruiting boards in the Commons for information about career opportunities with exhibiting companies.

For a list of this year's recruiters refer to page 10.

SPEAKER READY ROOM
Room 205, Second Floor, Hynes Convention Center

The Speaker Ready Room serves as a central check-in point for speakers and session chairs. Conference speakers may reserve a designated LCD projector in these rooms to help them prepare materials and rehearse for their presentations. Appointments will be taken on a first-come, first-served basis, and should be made with the staff person in Speaker Ready Room. Please sign up early – only one LCD will be available for speaker preparation.

Speaker ready room hours are:

Sunday	13:00 – 18:00
Monday	7:30 – 18:00
Tuesday	7:30 – 18:00
Wednesday	7:30 – 18:00
Thursday	7:30 – 14:30

MEDIA/PR OFFICE
Room 300, Third Floor, Hynes Convention Center

CHI 2009 welcomes members of the media. Please stop by the Media Office to get information on scheduled Media Events this week, and to learn more about CHI 2009, SIGCHI, and future CHI conferences. CHI 2009 media coordinators will be happy to schedule interviews with select authors at the conference. The Media Office will be open at the same hours as Conference Registration.

CHI POLICIES

CELL PHONE COURTESY

Please be considerate in your cell phone use. CHI 2009 requests that all cellular phones, pagers and other equipment with audible alarms be turned off in all sessions as a courtesy to the presenters and to the other attendees.

NAME BADGES

Your CHI 2009 name badge serves as your admission pass to conference sessions and events. Please wear your name badge at all times while inside the conference center. Conference management reserves the right to deny admission to any persons not wearing a CHI 2009 name badge.

BLOGGING & PHOTOSHARING

CHI encourages conference participants to blog CHI while at the event. Please add the category or keyword "CHI 2009" to your blog entries so that others may easily find them. We also encourage photosharing by services such as Flickr. Again, please add the tag "CHI 2009" to your photos.

ACCOMPANYING PERSONS

CHI 2009 welcomes accompanying persons including children at the conference. Partners, spouses, and significant others may purchase a "partner's pass" to gain access to all public social functions (including the conference reception), the exhibits, interactivity, and breaks in the commons. Infants are welcome in sessions and at social activities provided they are not a distraction to the other attendees. Children between the ages of 4 and 18 may attend sessions and social activities by purchasing a "partner's pass," again providing they are not a distraction to the other attendees.

The fee for a "partner's pass" is $250, and these passes may be purchased at the CHI Registration Desk.

ATTIRE

Attire for CHI 2009 is casual.

RECORDING PROHIBITED

The use of any type of audio or video recording device is not permitted during any part of the conference. The use of still cameras is permissible. However, reprinting photographs in print or electronic publications is prohibited without the written permission of the people photographed.

SMOKING POLICY

CHI conferences are smoke-free and the convention center is a non-smoking facility. Smoking is only permitted outside of the facility in the designated areas.

ELECTRICAL POWER

It is ACM SIGCHI policy to use the local power source. Electrical outlets in USA are 120 volts. If you are traveling from outside the USA, you will need an adapter to use your small appliances, if they are designed for a different standard. CHI 2009 does not provide power converters, extension cords, power strips or other electric accessories.

SERVICES

ATMS

A Citizen's Bank ATM is located on the ground floor, at the Boylston Street entrance. There is also an ATM located immediately outside the main doors of the Convention Center, in the Hynes Court are of the adjacent shopping mall.

SHOPPING & DINING

The Hynes Convention Center is part of a "city within a city," connected by pedestrian walkways to three hotels. The attached Copley Place Mall and the Shops at Prudential Center feature more than 200 shops and 27 restaurants, including a quick-service food court with familiar, low-cost eateries. Visit the Boston Concierge Desk for additional information.

FIRST AID / EMERGENCIES

Your safety is our primary concern. In case of an emergency. please contact the registration desk or the Conference Office (located room 202) immediately for assistance. There is also a First Aid office located in the main pedestrian hallway on the first floor.

LOST & FOUND

Please turn all lost and found items in to the Registration Desk. CHI 2009 management will then turn lost and found items over to building security at the conclusion of the conference.

BUSINESS & OTHER SERVICES

There is a FedEx Office business center located in the main pedestrian hallway on the first floor. Hours are 9AM – 5 PM, Monday – Friday.

Business centers are also located in many CHI 2009 hotels. Please see hotel staff for hours, rates, and additional information.

BOSTON, MASSACHUSETTS

From America's history found along the Freedom Trail to world-famous museums, musical institutions, and fabulous local cuisine, Boston is a city unlike any other. Boston's history is the history of America, starting with the Freedom Trail that includes the most important landmarks of the American Revolution -- the site of the Boston Tea Party, Fanueil Hall, Old North Church, and more. Best of all, Boston's history is within easy walking distance of the convention center and hotels, with dozens of historical sites providing unlimited opportunities for exploring.

One of America's oldest cities, Boston is also home to dozens of charming neighborhoods. Here are just a few you might want to visit during your stay.

- **Downtown** is home to many of Boston's most popular historic sites, including Faneuil Hall, the Old South Meeting House, the Old State House, and the original site of America's first public school, the Boston Latin School. The neighborhood's waterfront is the site of the New England Aquarium and base for harbor cruises and other waterfront activities. If you are in search of lobster and chowder, restaurants in Downtown offer the freshest and most delicious selection of seafood available anywhere. The area is also a sanctuary for shoppers, offering everything from large department stores to cozy boutiques.
- Home to American patriot Paul Revere, the **North End** is one of Boston's most historic neighborhoods. Traditionally a first stop for immigrants arriving in Boston, the North End is most well known as an enclave of Italian immigrants. Tourists come from near and far to sample authentic Italian cuisine, enjoy a cannoli or a cappuccino, and explore its narrow streets.
- A 19th-century residential area, **Beacon Hill** is named for the location of a beacon that once stood atop the highest point in central Boston. The home of statesmen, artists and intellectuals, Beacon Hill boast such former residents as Henry Wadsworth Longfellow, John Singleton Copley, and Louisa May Allcott. This charming half-square mile neighborhood is characterized by its elegant town homes, narrow brick streets with working gas lamps, local boutiques, cozy restaurants and quaint B&Bs.

Please visit the Boston Concierge Desk, located near registration, for more information on things to do while in Boston.

CITY TRANSPORTATION

A compact city, Boston is easily navigated by foot --- the best method to explore the city's narrow cobblestone streets and alleys filled with colorful shops. A simple stroll around the Back Bay area of the city, including the famous Newbury Street, will keep visitors entertained for hours.

The Massachusetts Bay Transportation Authority (MBTA) - better known as "The T" - connects all of Boston and its suburbs by subway, standard rail, bus and commuter boat. The "T" connects the airport with the convention centers and hotels, as well as point-to-point access anywhere in the city. The Hynes Convention Center is just steps away from four "T" stations: Hynes/CA, Copley, and Prudential stops on the Green Line, and the Back Bay stop on the Orange Line. For help getting anywhere in the city, visit the Boston Concierge Desk, located near registration.

CHI ACADEMY

The CHI Academy is an honorary group of individuals who have made extensive contributions to the study of HCI and who have led the shaping of the field.

This year we have elected seven new Academy members. In alphabetical order, they are:

Mark Ackerman

Mark is an associate professor in both the School of Information and the Division of Computer Science and Engineering at the University of Michigan. Mark is well known for his research in Computer-Supported Cooperative Work and social computing, first gaining acclaim for his Answer Garden expertise sharing system. Mark's research includes systems dealing with expertise finding and sharing, collaborative information access, privacy, and, increasingly, pervasive computing. Throughout his work, he has examined how to incorporate elements of the social world within software systems (such as with collaborative systems) and also to consider how those systems will affect their social settings in return. It is this expertise in both system design as well as the social analysis of system use that sets Mark apart.

Bill Gaver

Bill is a Professor of Design at Goldsmiths University where he heads the Interaction Research Studio. Bill's early work pioneered the utility of audio in the interface. He also made central contributions in early work on media spaces and informal communication at a distance. His recent contributions have illustrated the value of Design approaches to Human-Computer Interaction. The groundbreaking and provocative work of his studio has produced a range of thought provoking artifacts, leading to conceptual contributions and innovative design methodologies that have been widely adopted in the HCI community.

Clayton Lewis

Clayton was manager of the Human Factors Group at the IBM Watson Research Center in the early 1980s where he led and inspired some of first HCI projects on iterative, user-centered design. He co-led a 1980 IBM Corporate task force that identified usability as a key challenge and opportunity for research, which directly led to the establishment of the IBM User Interface Institute, effectively doubling IBM's research commitment to usability. His 1985 paper with John Gould, "Designing for Usability: Key Principles and What Designers Think" is still widely cited. In the early 1990s, with Peter Polson and others, he developed the cognitive walkthrough, a theory-based usability inspection method that has had wide and continuing impact on HCI practice. Since 1984, Clayton has been professor of computer science at the University of Colorado, Boulder, where he has worked on visual programming languages, cognitive assistive technology, and computer science education. He currently serves as Scientist in Residence at the Coleman Institute for Cognitive Disabilities at the university.

Wendy E. Mackay

Wendy is currently a Research Director at INRIA, in France, and is in charge of a research group called in|situ|. She also has a joint appointment at the University of Paris-Sud, where she is Vice President for Research, Computer Science. Her previous positions included the University of Aarhus, Rank Xerox EuroPARC, and Digital Equipment Corporation. Her research has engaged a number of important areas in human-computer interaction, including augmented reality, multimedia, awareness, computer-mediated communication, video analysis, and participatory design. One of the enduring themes of her work has been the importance of context in design, and developing design methods that take this into account. She has been very active in ACM, SIGCHI, and other professional organizations, chairing several conferences and serving on a number of important boards and committees.

Aaron Marcus

Aaron is President of Aaron Marcus and Associates, Inc., a user-interface design/analysis firm he founded in 1982. For 40 years, he has been a leader in the theory and practice of information-oriented graphic design applied to computer graphics. Among the first designers to use computers, Aaron has been designing user interfaces since 1969 when he began programming a page-layout application for AT&T's Picturephone™. As a Research Fellow at the East-West Center, Honolulu, 1978, he designed visualizations of global energy interdependence. As a co-principal investigator in 1982-85 under a DARPA grant, he designed more effective visualizations of the C-programming language. He taught at Princeton, Yale, University of California at Berkeley, and the Hebrew University of Jerusalem. He co/authored five books, two monographs, and more than 250 articles on topics such as cross-cultural communication, graphic design, information design, semiotics, symbol design, typography, and mobile user-interface design. In 2007, the American Institute of Graphic Arts named him a Fellow. He has been Editor-in-Chief of User Experience for six years and written a regular column for Interactions for five years. His computer graphics are in the museum collections of Princeton University and the Victoria and Albert Museum/London. Through his writings, tutorials, and consulting, Aaron introduced principles of functional and aesthetic visual design to the software industry. He bridges the worlds of visual design and computer technology and is recognized around the world for his contributions to the theory and practice of HCI.

Elizabeth Mynatt

Beth is Professor in the College of Computing at the Georgia Institute of Technology. She is Center Director of the GVU, an interdisciplinary research center that studies human computer interaction, ubiquitous computing, graphics, wearable computing, and computer supported cooperative work, among others. GVU is recognized as one of the best such research units in the world. She co-chaired the effort to create a program at Georgia Tech in Human Centered Computing, a term and concept that has spread internationally and is a focus area at the National Science Foundation. Beth is a pioneer and an internationally recognized expert in ubiquitous computing and assistive technologies. She directs the program in "Everyday Computing" and is one of the principal researchers in the Aware Home Research Initiative, where she investigates ways to allow older adults to age in place instead of moving to get care in an institution. She has made major contributions to technology support for chronic health care and cognitive prosthetics. She has served as conference chair for ICAD, UIST, and Ubicomp, and is the conference chair for CHI 2010.

Tom Rodden

Tom is Professor of Interactive Systems at the Mixed Reality Laboratory at the University of Nottingham. Tom's research focuses on the development of interactive technology that emerge from mixing physical and digital interaction. This research has provided new perspectives on pervasive and ambient computing by identifying realistic contexts where they can be applied to the benefit of users. From 2001 to 2007 he was director of the influential Equator project that brought together 8 different research institutes in the UK in a multi-disciplinary endeavor to address these technical, social and design issues. His earlier work at the University of Lancaster was influential in defining the role of ethnomethodological approaches in the design of systems for CSCW design. He has published widely in the areas of CSCW, HCI and Ubiquitous computing.

Congratulations to this year's Academy.

LIFETIME ACHIEVEMENT AWARD

The Lifetime Achievement Award is the most prestigious award SIGCHI gives. The criteria for achievement are the same as for the CHI Academy, only more so.

This year we present the CHI Lifetime Achievement Award to Sara Kiesler.

Sara Kiesler

Sara is Hillman Professor of Computer Science and Human-Computer Interaction at the Carnegie Mellon HCI Institute. She is a well-known social psychologist who has worked on group dynamics, decision-making, and communication. Sara's research in HCI has illuminated many of the most significant social impacts of computing, such as: "flaming," social equalization, open communication, electronic groups, information sharing, and distributed collaboration. She brought concepts from social psychology and HCI to robotics, helping to create the new interdisciplinary field of human-robot interaction.

Her books Connections (with Lee Sproull), Culture of the Internet, and Distributed Work (with Pam Hinds) have had a wide influence on both researchers and practitioners. Sara's study, with Bob Kraut, of the impact of the Internet on the sociability of the home environment has received national attention. Recently, with Jonathan Cummings she has studied two multidisciplinary research programs at the National Science Foundation, articulating factors that lead to success. Her own work is a model of collaboration, as she has worked with numerous colleagues and students.

Sara also serves on a number of national boards and panels, and has received numerous awards for her research and service.

LIFETIME SERVICE AWARD

The CHI Lifetime Service Award goes to individuals who have contributed to the growth of SIGCHI in a variety of capacities. This award is for extended services to the community at large over a number of years. Criteria for this award are: Service to SIGCHI and its activities in a variety of capacities; extended contributions over many years; influence on the community at large.

Clare-Marie Karat

Clare-Marie is a research staff member at IBM TJ Watson Research Center. Across the last two decades, she has volunteered to support SIGCHI through service on the Executive Committee, committees supporting the SIGCHI EC such as the SIGCHI US Public Policy Committee, the CHI conference program, the SIGCHI Bulletin, Editorial Boards of several journals in the field, NSF committees, and numerous other volunteer efforts for the community with the goal of recognizing and communicating the value of HCI and SIGCHI to the international community. Throughout her volunteer efforts, Clare-Marie has worked to bring new people into the CHI community and has mentored them to move into leadership positions themselves. Her service to the community has provided long-term benefits to SIGCHI.

Steven Pemberton

Steven is a researcher in the Information Systems department at the Centrum voor Wiskunde & Informatica, and HTML and Forms lead at W3C, the World Wide Web Consortium. Steven has a long history of service to the SIGCHI conference and organization. He was editor-in-chief of the SIGCHI Bulletin from 1993 -1999 and editor-in-chief of interactions from 1998 to 2004. Steven was the local arrangements chair for INTERCHI in 1993, the student volunteers chair for CHI 1995 and the conference co-chair for CHI 1997. He was a member of the SIGCHI Executive Committee for a decade, from 1994 to 2004. He was also a founding member of SIGCHI.NL and the Amsterdam New Media Association.

SOCIAL IMPACT AWARD

This award is given to individuals who promote the application of human-computer interaction research to pressing social needs.

Helen Petrie

Helen is Professor of Human Computer Interaction in the Department of Computer Science at the University of York. For the past 15 years she has conducted internationally-recognized research on the use of computers and new technologies for people with disabilities and older people. Helen has been involved in more than 30 British and international projects in this area and has over 100 publications. Projects include location-based services for blind people to help them navigate streets, facilitating the use of mobile technologies for people with visual impairments, and multi-media and multi-modal reading systems to encourage access to books. Her team conducted the largest study in the world of web accessibility for people with disabilities, which emphasized the importance of user testing in this area and was awarded the British Interactive Media Association "Expert's Award" for 2004. She has received a Royal Television Society Technical Innovation Prize, a Best of CHI award for her research into remote usability evaluation methods with disabled people, and is a trustee of FAST, a UK charity that brings innovative products to market and improves services for disabled and older people.

PAST HONOREES

SIGCHI Lifetime Achievement Award

2008 Bill Buxton
2007 James D. Foley
2006 Gary M. Olson, Judith S. Olson
2005 Tom Landauer
2004 Thomas P. Moran
2003 John M. Carroll
2002 Donald A. Norman
2001 Ben Shneiderman
2000 Stuart K. Card
1998 Douglas Engelbart

CHI Academy Members

Class of 2007 Joëlle Coutaz, Karen Holtzblatt, Gerhard Fischer, Robert J. K. Jacob, Jun Rekimoto, Chris Schmandt

Class of 2006 Scott Hudson, Hiroshi Ishii, Michel Beaudouin-Lafon, Jakob Nielsen, Peter Pirolli, George Robertson

Class of 2005 Ron Baecker, Susan Dumais, John Gould, Saul Greenberg, Bonnie E. John, Andrew Monk

Class of 2004 George Furnas, Jonathon Grudin, Brad Meyers, William Newman, Dan R. Olsen Jr., Brian Shackel, Terry Winograd

Class of 2003 Thomas Green, James D. Hollan, Robert E. Kraut, Gary M. Olson, Peter G. Polson

Class of 2002 William A. S. Buxton, John M. Carroll, Douglas C. Engelbart, Sara Kiesler, Thomas K. Landauer, Lucy A. Suchman

Class of 2001 Stuart K. Card, James D. Foley, Morten Kyng, Thomas P. Moran, Judith S. Olson, Ben Shneiderman

SIGCHI Social Impact Award

2008 Vicki Hanson
2007 Gregory Abowd, Gary Marsden
2006 Ted Henter
2005 Gregg Vanderheiden

SIGCHI Lifetime Service Award

2008 John Karat, Marian Williams
2007 Richard I. Anderson
2006 Susan M. Dray
2005 Sara Bly, John 'Scooter' Morris, Don Patterson, Gary Perlman, Marilyn Mantei Tremaine
2004 Robin Jeffries, Gene Lynch
2003 Lorraine Borman
2002 Dan R. Olsen Jr.
2001 Austin Henderson

BEST OF CHI AWARDS

The SIGCHI "Best of CHI" awards honor exceptional submissions to SIGCHI sponsored conferences. The CHI Papers and Notes committees nominate up to 5% of their submissions as Award Nominees. Separate awards committees then choose no more than 1% of the total submissions to receive a "Best" designation. Congratulations to award winners and nominees for their outstanding contributions to CHI 2008 and to our field.

SIGCHI BEST OF CHI 2009 COMMITTEE:

Tom Rodden (chair), *University of Nottingham*
Carl Gutwin, *University of Saskatchewan*
Steve Harrison, *Virginia Polytechnic Institute*
Chris Schmandt, *MIT*
Susan Fussell, *Cornell*
Wendy Mackay, *INRIA*

CHI 2009 BEST PAPERS, AWARDED BY SIGCHI

Predicting Tie Strength With Social Media (page 29)
Eric Gilbert, Karrie Karahalios, *University of Illinois at Urbana-Champaign*, USA

Undo and Erase Events as Indicators of Usability Problems (page 44)
David Akers, *Stanford University*, USA
Matthew Simpson, Robin Jeffries, *Google, Inc.*, USA
Terry Winograd, *Stanford University*, USA

From Interaction to Trajectories: Designing Coherent Journeys Through User Experiences (page 46)
Steve Benford, *The University of Nottingham*, UK
Gabriella Giannachi, *The University of Exeter*, UK
Boriana Koleva, Tom Rodden, *The University of Nottingham*, UK

Musink: Composing Music through Augmented Drawing (page 48)
Theophanis Tsandilas, Catherine Letondal, Wendy E. Mackay, *INRIA / Université Paris-Sud,* France

Sizing the Horizon: The Effects of Chart Size and Layering on the Graphical Perception of Time Series Visualizations (page 64)
Jeffrey Heer, *Stanford University*, USA
Nicholas Kong, Maneesh Agrawala, *University of California, Berkeley*, USA

Social Immersive Media: Pursuing Best Practices for Multi-user Interactive Camera/Projector Exhibits (page 66)
Scott S. Snibbe, *Sona Research*, USA
Hayes S. Raffle, *Massachusetts Institute of Technology*, USA

Ephemeral Adaptation: The Use of Gradual Onset to Improve Menu Selection Performance (page 71)
Leah Findlater, Karyn Moffatt, Joanna McGrenere, Jessica Dawson, *University of British Columbia*, Canada

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Designing Digital Games for Rural Children: A Study of Traditional Village Games in India (page 25)
Matthew Kam, *Carnegie Mellon University*, USA
Akhil Mathur, Anuj Kumar, *Dhirubhai Ambani Institute of Information and Communication Technology*, India
John Canny, *University of California*, Berkeley, USA

Non-Universal Usability? A Survey of How Usability Is Understood by Chinese and Danish Users (page 25)
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Morten Hertzum, *Roskilde University*, Denmark
Torkil Clemmensen, *Copenhagen Business School*, Denmark

Correlating Low-Level Image Statistics with Users' Rapid Aesthetic and Affective Judgments of Web Pages (page 25)
Xianjun Sam Zheng, *Siemens Corporate Research*, USA
Ishani Chakraborty, *Siemens Corporate Research/Rutgers University*, USA
James Jeng-Weei Lin, *Siemens Corporate Research*, USA
Robert Rauschenberger, *Siemens Corporate Research/Simon Fraser University*, USA

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Paul M. Aoki, *Intel Research*, USA
R.J. Honicky, *Intel Research/University of California, Berkeley*, USA
Alan Mainwaring, Chris Myers, *Intel Research*, USA
Eric Paulos, *Intel Research/Carnegie Mellon University*, USA
Sushmita Subramanian, Allison Woodruff, *Intel Research*, USA

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Kirsten Boehner, Nicholas A. Knouf, Phoebe Sengers, *Cornell University*, USA

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Hao-Chuan Wang, Susan Fussell, Leslie Setlock, *Cornell University*, USA

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F. Maxwell Harper, Daniel Moy, Joseph A. Konstan, *University of Minnesota*, USA

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Fast Gaze Typing with an Adjustable Dwell Time (page 34)
Päivi Majaranta, Ulla-Kaija Ahola, Oleg Špakov, *University of Tampere*, Finland

Awareness, Training and Trust in Interaction with Adaptive Spam Filters (page 50)
Henriette S.M. Cramer, Vanessa Evers, Maarten W. van Someren, Bob J. Wielinga, *University of Amsterdam*, The Netherlands

Graph Sketcher: Extending Illustration to Quantitative Graphs (page 55)
Robin Stewart, *Massachusetts Institute of Technology*, USA
mc schraefel, *University of Southampton*, UK

Finding Canonical Behaviors in User Protocols (page 64)
Walter C. Mankowski, Peter Bogunovich, Ali Shokoufandeh, Dario D. Salvucci, *Drexel University*, USA

CHI 2009 HONORABLE MENTION NOTES, AWARDED BY SIGCHI

Unravelling Seams: Improvoing Mobile Gesture Recognition with Visual Feedback Techniques (page 51)
Sven Kratz, *Deutsche Telekom Laboratories*, Germany
Raphael Ballagas, *Nokia Research Center*, USA

Disambiguating Ninja Cursors with Eye Gaze (page 67)
Kari-Jouko Räihä, Oleg Špakov, *University of Tampere*, Finland

Note to Self: Examining Personal Information Keeping in a Lightweight Note-Taking Tool (page 67)
Max G. Van Kleek, Michael Bernstein, Katrina Panovich, Gregory G. Vargas, David R. Karger, *Massachusetts Institute of Technology*, USA
mc schraefel, *University of Southampton*, UK

Yours, Mine and (Not) Ours: Social Influences on Group Information Repositories (page 85)
Emilee Rader, *University of Michigan*, USA

COURSE 7 | ROOM 206

HCI History: Trajectories Into the Future

19:00 - 20:30

INSTRUCTOR:
Jonathan Grudin, *Microsoft Research,* USA

Benefits: Learn about the history of human-computer interaction as it has been addressed by psychologists, computer scientists, human factors engineers, information systems researchers, designers, and others. By understanding the dynamics that have brought us here, we are in a better position to understand how to position effectively our efforts going forward. HCI has changed dramatically and will continue to change. We can't predict the future in detail, but understanding past patterns can sensitize us to new developments as they start to appear.

Audience: Anyone who thinks that the best preparation for where we are headed is to understand the road we have traveled to get where we are today.

COURSE 1 | ROOM 207

Evaluating User Efficiency

18:00 - 21:30

INSTRUCTOR:
Deborah J. Mayhew, *Deborah J. Mayhew & Associates*, USA

Benefits: There are two broad dimensions of the software quality of "usability". One is "ease-of-learning", which refers to how easy to learn and remember a given software or web site user interface design is for novice, casual and intermittent users. The other is "ease-of-use", which refers to how efficiently highly trained, practiced and expert users can perform tasks on a given software or web site user interface design. These two dimensions of usability are not the same, and often come in direct conflict with one another. The term "usability" is commonly associated with the dimension of ease-of-learning. This course focuses on achieving the other dimension of usability: ease-of-use, or efficiency.

This course provides a high level introduction to a practical technique for evaluating and comparing the potential efficiency of user interface designs, for anything from a simple interaction (e.g., scrolling vs. paging) to a full user task (e.g., processing a credit card payment), based on Card, Moran and Newell's Keystroke Level Modeling technique.

Audience: This course is at an introductory level. It is appropriate for any kind of user experience professional without any depth of training or experience in designing for efficiency.

COURSE 25 | ROOM 208

Beyond Beta: Inspiring Long-Term Thinking About Interactive Technology with Envisioning Cards

19:00 - 20:30

INSTRUCTORS:
Lisa P. Nathan, *University of Washington*, USA
Batya Friedman, *University of Washington*, USA
Shaun K. Kane, *University of Washington*, USA

Benefits: Participants will learn about Value Sensitive Design's envisioning criteria, which we developed to help designers address the long-term impact of their work on individuals, societies, and the natural environment. The course will provide an opportunity to engage the envisioning criteria using Envisioning Cards, a method for enriching design through the consideration of human values and long-term, systemic interactions. Points of discussion include the challenges of incorporating values and long-term considerations into the short-term life cycle of design projects and perspectives on the future of research and development of tools for incorporating envisioning criteria into design processes.

Audience: No specific background is required. This course will be of primary interest to practitioners, educators, and researchers who are concerned with issues of human values (e.g., privacy, autonomy, security, environmental sustainability), but are unclear as to how to incorporate these complex concerns into their daily practice of design, education and research.

COURSE 2 | ROOM 210

Human-Computer Interaction: Introduction and Overview

18:00 - 21:30

INSTRUCTORS:
Keith A. Butler, *Microsoft Corporation, USA*
Robert J.K. Jacob, *Tufts University, USA*
David Kieras, *University of Michigan, USA*

Benefits: This course is intended to give newcomers enough background in the field of HCI to make their conference experience much more meaningful. It provides a framework to understand how the various topics are related to research and practice. It is a tried-and-true introduction and has become a CHI conference tradition.

Audience: Mainly first-time CHI attendees, typically professionals from computing-related fields who are new to the field of human-computer interaction. No background in HCI is assumed.


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Notes

Monday

= 15 minutes = 30 minutes = unscheduled time

	8:30–10:00	10:00–10:30	11:30–13:00	14:30–16:00	16:30–18:00
Ballroom A	Opening Plenary **Judith S. Olson** Even small distance matters: Social ergonomics in collocated and remote team Page 24	CHI MADNESS Page 24	Papers/Notes Designing for Other Cultures Page 25	Papers/Notes Online Relationships Page 29	Papers Sustainability 1 Page 33
Ballroom B			Panels Creativity, Challenges, and Opportunities in Social Computing Page 25	Panels What Can User Experience Learn from Food Design Page 29	Design Community Events Invited Talk Jan Chipchase - Designing for Global Impact Page 33
Ballroom C			Papers Understanding Information Page 25	Papers/Notes Robots Page 29	Papers/Notes Accessibility/Special Needs Page 33
Room 302			Papers/Notes Expertise/People Finding Page 26	Papers Education and Science Page 30	Papers/Notes Creative Thought and Self-Improvement Page 34
Room 304			Papers/Notes Design Methods Page 26	Papers Personal Information Management Page 30	Papers Telepresence and Online Media Page 34
Room 306			Papers Navigation Page 27	Papers Clicking on Buttons Page 31	Papers/Notes Learning Challenges Page 35
Room 309			Papers Aesthetics Page 27	Invited Discussion Real Life and Real Work: Real Experiences... Page 31	Panels Growing up Programming: Democratizing the Creations of Dynamic, Interactive Media Page 35
Room 310			SIG Driving User Centered Design into IT Organizations -- Is It Possible? Page 27	SIG User Software Engineering Page 31	SIG Designing for Families Page 36
Room 311			Papers New Tabletop Input and Output Methods Page 27	Papers/Notes Privacy and Trust Page 31	Papers Tangibles on Tables Page 36
Room 312			Interactivity Touch and Feel Page 28	Case Studies Specific User Populations Page 32	alt.chi Feel the Love, Love the Feel Page 36
Room 206			Course 6 Drawing Ideas: Hand-generated Sketching for Interaction Design Page 37		
Room 207			Course 3 Giving Children a Voice in the Design of Technology: Methods and Strategies Page 37		Course 26 Top Field Interviewing Mistakes: Recognizing and Preventing Them Page 38
Room 208			Course 4 Innovations in Card Sorting: A Hands-on Approach Page 37		Course 8 Addressing Value Tensions During The Design Process Page 38
Room 210			Course 5 Avoiding We can't change THAT!: An Introduction to Usability & Software Architecture Page 37		Course 9 The Psychological Basis for UI Design Rules Page 38

Commons/Hall D	Special Events
Exhibits & Interactivity 18:30–21:00	Conference Reception & Exhibits Grand Opening 18:30–21:00 Commons/Hall D

■ **OPENING PLENARY – BALLROOM A/B/C**

EVEN SMALL DISTANCE MATTERS: SOCIAL ERGONOMICS IN COLLOCATED AND REMOTE TEAMS

Judith S. Olson
***University of California, Irvine*, USA**

Having been in the field of HCI for a long time, I have noted a number of topics that we haven't addressed yet, ones I think are ripe for exploration. After reviewing these, I noticed that one of them is one I know something about, but haven't put into words. Social ergonomics. According to the International Ergonomics Association, ergonomics "is the scientific discipline concerned with designing according to human needs, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance." There is physical ergonomics, having to do with design of workplaces, and cognitive ergonomics, having to do with design of systems and tasks that do not overstress the cognitive limits of workers/users. I think it's time to study social ergonomics as the design of workplaces and systems that fit the natural social capabilities and inclinations of workers/users. I review some of the highlights of what is known about natural social capabilities and inclinations, and then show how they play out in both "radically collocated" teamwork and remote teamwork. I finish with a set of guidelines for everyone to use when having to work either collocated or remotely.

Judith Olson holds the Donald Bren Interdisciplinary Chair of Information and Computer Sciences in the Department of Informatics, the Merage School of Business and the School of Social Ecology at the University of California at Irvine. Prior to this she was the Richard Pew Professor of Human Computer Interaction at the School of Information and the Ross School of Business and the Department of Psychology at the University of Michigan. Her research has spanned cognitive modeling, studies of group use of a shared editor and electronic whiteboards, field studies of teamwork both collocated and remote, laboratory studies of the value of video for productivity and trust building, and organizational simulations of remote work, and agent base models of in-group behavior. She was in the initial class of inductees to the CHI Academy, and in 2006, along with her collaborator and husband, Gary, was given the CHI Lifetime Achievement Award. In 2009, she was made a Fellow of the ACM.

■ **CHI MADNESS | BALLROOM A/B/C**

10:00-10:30

SESSIONS CHAIRS:
Jeffrey Nichols, *IBM Research, USA*
Mira Dontcheva, *Adobe Advanced Technology Labs, USA*

Confused about what to do next? Too many options for you to choose from? We end this session with CHI Madness.

CHI Madness, now in its fourth year, returns to give everyone a lightning speed overview of the day's program. This year, the CHI madness presentations speed up to 25 seconds to highlight new venues such as TOCHI paper and a record number of accepted papers. The presenters in many of today's sessions will tell you what's exciting about their presentation. It's fast-paced; it's fun; sometimes it's even funny.

■ PAPERS/NOTES | BALLROOM A

DESIGNING FOR OTHER CULTURES

SESSION CHAIR: Steve Harrison, *Virginia Tech*

PAPER | Designing Digital Games for Rural Children: A Study of Traditional Village Games in India

Matthew Kam, *Carnegie Mellon University*, USA
Akhil Mathur, Anuj Kumar, *Dhirubhai Ambani Institute of Information and Communication Technology*, India
John Canny, *University of California, Berkeley*, USA

Analyze the elements in traditional village games and how they differ from contemporary Western videogames. Inform how videogames can be designed for rural children in the developing world.

PAPER | Non-Universal Usability? A Survey of How Usability Is Understood by Chinese and Danish Users

Olaf Frandsen-Thorlacius, Kasper Hornbæk, *University of Copenhagen*, Denmark
Morten Hertzum, *Roskilde University,* Denmark
Torkil Clemmensen, *Copenhagen Business School*, Denmark

Surveys the perception of usability among 412 Chinese and Danes; argues that culture influences the importance users assign to different aspects of usability.

NOTE | A Comparative Study of Speech and Dialed Input Voice Interfaces in Rural India

Neil Patel, *Stanford University*, USA
Sheetal Agarwal, Nitendra Rajput, Amit Nanavati, *IBM India Research Laboratory*, India
Paresh Dave, *Development Support Center*, India
Tapan S. Parikh, *University of California, Berkeley*, USA

A study comparing speech and dialed input for a voice UI with users in rural India. Can help designers of IT for developing regions evaluate the efficacy of speech recognition.

NOTE | Sacred Imagery in Techno-Spiritual Design

Susan P. Wyche, Kelly E. Caine, Benjamin K. Davison, *Georgia Institute of Technology*, USA
Shwetak N. Patel, *University of Washington*, USA
Michael Arteaga, Rebecca E. Grinter, *Georgia Institute of Technology*, USA

We highlight sacred imagery's significance in techno-spiritual design. We demonstrate this through the real world evaluation of an application that prompts Muslims to their daily prayer times.

■ PANELS | BALLROOM B

CREATIVITY, CHALLENGES, AND OPPORTUNITIES IN SOCIAL COMPUTING

PANELISTS:
Gerhard Fischer, *University of Colorado*, USA
Pamela Jennings, *Banff New Media Institute*, Canada
Mary Lou Maher, *NSF*, USA
Mitchel Resnick, *Massachusetts Institute of Technology*, USA
Ben Shneiderman, *University of Maryland*, USA

There is a convergence in recent theories of creativity that go beyond characteristics and cognitive processes of individuals to recognize the importance of the social construction of creativity. In parallel, there has been a rise in social computing (based on social production and mass collaboration and facilitated by new technological developments such as the cyberinfrastructure and Web 2.0 architectures) supporting the collaborative construction of knowledge and exemplified by examples such as open source software, wikis, blogs, multi-player games, warehouses, etc. The panel will discuss the challenges and opportunities from the confluence of these two developments by bringing together the contrasting and controversial perspective of the individual panel members. It will synthesize from different perspectives an analytic framework to understand these new developments, and how to promote rigorous research methods and how to identify the unique challenges in developing evaluation and assessment methods for creativity research.

■ PAPERS | BALLROOM C

UNDERSTANDING INFORMATION

SESSION CHAIR: Anthony Hornof, *University of Oregon*

PAPER | Correlating Low-Level Image Statistics with Users' Rapid Aesthetic and Affective Judgments of Web Pages

Xianjun Sam Zheng, *Siemens Corporate Research*, USA
Ishani Chakraborty, *Siemens Corporate Research and Rutgers University*, USA
James Jeng-Weei Lin, *Siemens Corporate Research*, USA
Robert Rauschenberger, *Siemens Corporate Research and Simon Fraser University*, USA

We correlate users' aesthetic ratings of web pages with computer-vision-derived analyses of web pages using pixel-level statistics, advancing an algorithmic approach to automatically determining what people will find aesthetically pleasing.

PAPER | Exploring the Analytical Processes of Intelligence Analysts

George Chin, Olga A. Kuchar, Katherine E. Wolf, *Pacific Northwest National Laboratory*, USA

Observation case study that captures, examines, and elucidates the analytical processes and work practices of intelligence analysts. Demonstrates application of work-oriented analysis methods and provides rare insight into guarded practices.

PAPER | What Do You See When You're Surfing? Using Eye Tracking to Predict Salient Regions of Web Pages

Georg Buscher, *DFKI*, Germany
Edward Cutrell, Meredith Ringel Morris, *Microsoft Research*, USA

An eye tracking study shows the distribution of visual attention on Web pages dependent on task type and demographics. We present a DOM-based model predicting visual attention on Web pages.

■ **PAPERS/NOTES | ROOM 302**

EXPERTISE/PEOPLE FINDING

SESSION CHAIR: Geraldine Fitzpatrick, *University of Sussex*

PAPER | Expert Recommender Systems in Practice: Evaluating Semi-automatic Profile Generation

Tim Reichling, *University of Siegen*, Germany
Volker Wulf, *University of Siegen and Fraunhofer FIT*, Germany

We present results of a case study of an expert recommender system in a large European industrial association. The system involves users in selecting textual documents for semi-automatic profile generation.

PAPER | Making Sense of Strangers' Expertise from Signals in Digital Artifacts

N. Sadat Shami, Kate Ehrlich, *IBM T.J. Watson Research Center*, USA
Geri Gay, Jeffrey T. Hancock, *Cornell University*, USA

Introduces the use of signaling theory as a decision aid in helping people make sense of different information in an online profile within the context of expertise search.

NOTE | An Exploration of Social Requirements for Exercise Group Formation

Mike Wu, Abhishek Ranjan, Khai N. Truong, *University of Toronto*, Canada

Presents a synergistic pairing of community content creation with learning-based information extraction, demonstrating their simultaneous acceleration by studying over 2400 visitors contributing to Wikipedia articles as a non-primary task.

NOTE | Team Analytics: Understanding Teams in the Global Workplace

Jan H. Pieper, Julia Grace, Stephen Dill, *IBM Almaden Research Center*, USA

Team Analytics is a novel application that provides profile information for groups of people. A user survey shows that group-oriented tools are urgently needed by people working in global teams.

■ **PAPERS/NOTES | ROOM 304**

DESIGN METHODS

SESSION CHAIR: John Zimmerman, *Carnegie Mellon University*

PAPER | Getting Inspired! Understanding How and Why Examples are Used in Creative Design Practice

J. Scarlett, R. Herring, Chia-Chen Chang, Jesse Krantzler, Brian P. Bailey, *University of Illinois, Urbana-Champaign*, USA

This paper offers insights into the retrieval, storage and dissemination of inspirational materials in three design domains. We also discuss how computer-based tools can better support this common behavior.

PAPER | Using Improvisation to Enhance the Effectiveness of Brainstorming

Elizabeth Gerber, *Northwestern University*, USA

Ties specific improvisational techniques to aspects of brainstorming. Can assist interaction design educators and team leaders in reinforcing rules of group brainstorming.

NOTE | Interactivity Attributes: A New Way of Thinking and Describing Interactivity

Youn-Kyung Lim, Sang-Su Lee, Kwang-Young Lee, *KAIST*, South Korea

We propose a new way of understanding interactivity that is the immaterial part of an interactive artifact but can be concretely describable and perceivable as we do with physical materials.

NOTE | PrintMarmoset: Redesigning the Print Button for Sustainability

Jun Xiao, Jian Fan, *HP Labs*, USA

Presents a case of sustainable interaction design that balances usability, utility and sustainable goals and engages users continuously through social means. Can inspire other novel HCI solutions to "mundane" problems.

■ **PAPERS | ROOM 306**

NAVIGATION

SESSION CHAIR: Danyel Fisher, *Microsoft Research*

PAPER | Design, Implementation and Evaluation of a Novel Public Display for Pedestrian Navigation: The Rotating Compass

Enrico Rukzio, Michael Müller, Robert Hardy, *Lancaster University*, UK

Design, implementation and evaluation of a novel pedestrian navigation system that combines a public and private display in order to provide individual navigation cues on a public display.

PAPER | Eyespy: Supporting Navigation through Play

Marek Bell, Stuart Reeves, *University of Glasgow*, UK
Barry Brown, *University of California, San Diego*, USA
Scott Sherwood, Donny McMillan, John Ferguson, Matthew Chalmers, *University of Glasgow*, UK

We present a mobile game with byproducts, of quality verified in-game. In analyzing the ways players oriented to one another's navigational practices, we explore design issues for human computation systems.

PAPER | Simulated Augmented Reality Windshield Display as a Cognitive Mapping Aid for Elder Driver Navigation

SeungJun Kim, Anind K. Dey, *Carnegie Mellon University*, USA

Presents a novel in-vehicle augmented reality system with navigation information superimposed on windshields. An evaluation of a simulated version shows that it improves elders' driving performance.

■ **PAPERS | ROOM 309**

AESTHETICS

SESSION CHAIR: John Carroll, *The Pennsylvania State University*

TOCHI PAPER | Interfaces with the Ineffable: Meeting Aesthetic Experience On Its Own Terms

Kirsten Boehner, Phoebe Sengers, Simeon Warner, *Cornell University*, USA

TOCHI PAPER | Performing Perception - Staging Aesthetics of Interaction

Peter Dalsgaard, Lone K. Hansen, *Aarhus University*, Denmark

Presents the concept of performing perception: the user is simultaneously operator, performer and spectator when interacting with public installations. The awareness of these roles is crucial for the user experience.

TOCHI PAPER | The Aesthetics of Emergence: Co-constructed Interactions

Melanie Baljko, Nell Tenhaaf, *York University*, USA

■ **SPECIAL INTEREST GROUP | ROOM 310**

DRIVING USER CENTERED DESIGN INTO IT ORGANIZATIONS -- IS IT POSSIBLE?

ORGANIZERS:
Karen Holtzblatt, *InContext Enterprises*, USA
Joshua Barr, *Allstate Insurance Company*, USA
Les Holtzblatt, *The MITRE Corporation*, USA

■ **PAPERS | ROOM 311**

NEW TABLETOP INPUT AND OUTPUT METHODS

SESSION CHAIR: Roel Vertegaal, *Queens University*

PAPER | PenLight: Combining a Mobile Projector and a Digital Pen for Dynamic Visual Overlay

Hyunyoung Song, *Autodesk Research*, Canada/ *University of Maryland*, USA
Tovi Grossman, George Fitzmaurice, *Autodesk Research*, Canada
Francois Guimbretiere, *University of Maryland and Cornell University*, USA
Azam Khan, Ramtin Attar, Gordon Kurtenbach, *Autodesk Research*, Canada

Using our PenLight system, we explore the interaction design space and its accompanying interaction techniques in a digital pen embedded with a spatially-aware miniature projector.

PAPER | To Move or Not to Move: A Comparison between Steerable versus Fixed Focus Region Paradigms in Multi-Resolution Tabletop Display Systems

Chuan-Heng Hsiao, Li-Wei Chan, Ting-Ting Hu, *National Taiwan University*, Taiwan
Mon-Chu Chen, *Universidade da Madeira*, Portugal
Jane Hsu, Yi-Ping Hung, *National Taiwan University*, Taiwan

We first classified working scenarios with analogies to different eye movement types. Then we conducted two user study experiments demonstrating the performance is better with the steerable focus region system.

PAPER | Transparent 2-D Markers on an LCD Tabletop System

Hideki Koike, Wataru Nishikawa, *University of Electro-Communications*, Japan
Kentaro Fukuchi, *Japan Science and Technology Agency*, Japan

Describes transparent 2-D markers on an LCD tabletop system which uses the polarization features of the LCD and optical films. By using the markers, tangible transparent MagicLenses applications are developed.

■ **INTERACTIVITY | ROOM 312**

TOUCH AND FEEL

SESSION CHAIR: Gonzalo Ramos, *Microsoft Live Labs*

A Hand Clap Interface for Sonic Interaction with the Computer

Antti Jylhä, Cumhur Erkut, *Helsinki University of Technology*, Finland

"Hiya-Atsu" Media: Augmenting Digital Media with Temperature

Mutsuhiro Nakashige, Minoru Kobayashi, Yuriko Suzuki, Hidekazu Tamaki, Suguru Higashino, *NTT Corporation*, Japan

Tactful Calling: Urgency-Augmented Phone Calls through High-Resolution Pressure Input on Mobile Phones

Fabian Hemmert, Matthias Löwe, Anne Wohlauf, Gesche Joost, *Deutsche Telekom Laboratories*, Germany

Tangible Sketching in 3D with Posey

Michael Philetus Weller, Mark D. Gross, *Carnegie Mellon University*, USA
Ellen Yi-Luen Do, *Georgia Institute of Technology*, USA

The Mousegrip

Florian 'Floyd' Mueller, Martin R. Gibbs, Frank Vetere, *The University of Melbourne*, Australia

■ PAPERS/NOTES | BALLROOM A

ONLINE RELATIONSHIPS

SESSION CHAIR: John Thomas, *IBM Research*

PAPER | "Make New Friends: but Keep the Old" - Recommending People on Social Networking Sites

Jilin Chen, *University of Minnesota*, USA
Werner Geyer, Casey Dugan, Michael Muller, *IBM T.J. Watson Research Center*, USA
Ido Guy, *IBM Haifa Research Lab*, Israel

We explored recommending people as friends in social networking sites. Through large-scale experiments we discovered different characteristics of different recommendation algorithms, which can help build more effective social networking sites.

PAPER | Predicting Tie Strength With Social Media

Eric Gilbert, Karrie Karahalios, *University of Illinois at Urbana-Champaign*, USA

Presents a model built from more than 2,000 friendships which maps social media data to tie strength. Explores theoretical implications and suggests improvements for social media design elements.

NOTE | "My Dating Site Thinks I'm a Loser": Effects of Personal Photos and Presentation Intervals on Perceptions of Recommender Systems

Shailendra Rao, *Stanford University*, USA
Tom Hurlbutt, *Stanford University / Intuit*, USA
Clifford Nass, *Stanford University*, USA
Nundu JanakiRam, *Stanford University / Google*, USA

Investigates how attitudes and behaviors are affected by personal photos and recommendation timing while using a poor online dating recommendation system during the personal-information-gathering and results-presenting periods.

NOTE | The Application of Forgiveness in Social System Design

Asimina Vasalou, *University of Bath*, UK
Jens Riegelsberger, *Google, Inc.*, UK
Adam Joinson, *University of Bath*, UK

When an offence occurs, the victim and offender can overcome the harm done through forgiveness. This paper demonstrates how forgiveness can be supported in social systems with five design provisions.

■ PANELS | BALLROOM B

WHAT CAN USER EXPERIENCE LEARN FROM FOOD DESIGN

PANELISTS:
Patanjali S. Venkatacharya, *Oracle Corp.*, USA
Ronald M. Baecker, *University of Toronto*, Canada
Daniel Schwartz, *Oracle USA Inc.*, USA
Chef Jody Adams, *Rialto Restaurant*, USA
Chef Jason Santos, *Gargoyles Restaurant*, USA

This panel will bring together a group of user experience experts, with a group often overlooked in the art and science of user experience & food designers. The panelists will include: an award-winning Michelin-starred Chef, a culinary school instructor, a user experience practitioner, and a world-renowned HCI academic. Together, the panel will compare and contrast concepts from food design and user experience including the challenges of meeting demanding end-user needs, and best practices from food design that one could potentially apply to the design of everyday things.

■ PAPERS/NOTE | BALLROOM C

ROBOTS

SESSION CHAIR: Sriram Subramanian, *University of Bristol*

PAPER | Magic Cards: A Paper Tag Interface for Implicit Robot Control

Shengdong Zhao, *National University of Singapore*, Singapore
Koichi Nakamura, *University of Tokyo*, Japan
Kentaro Ishii, *Keio University*, Japan
Takeo Igarashi, *University of Tokyo*, Japan

We proposed, implemented, and evaluated an alternative robot control interface where users control robots implicitly by leaving commands printed on paper tags to complete housework tasks.

PAPER | The VoiceBot: A Voice Controlled Robot Arm

Brandi House, Jonathan Malkin, Jeff Bilmes, *University of Washington*, USA

Introduces a voice controlled robotic arm implemented using the Vocal-Joystick and evaluated with a 2D simulated world and a 3D robotic arm manipulating physical objects. Results demonstrate the concept's feasibility.

NOTE | "Pimp My Roomba": Designing for Personalization

JaYoung Sung, Rebecca E. Grinter, Henrik I. Christensen, *Georgia Institute of Technology*, USA

This study reports how and why users customize Roomba, the vacuuming robot with a personalization toolkit we provided. We illustrate implications of designing for personalization based on our findings.

NOTE | Sketch and Run: A Stroke-based Interface for Home Robots

Daisuke Sakamoto, Koichiro Honda, *The University of Tokyo*, Japan
Masahiko Inami, *Keio University*, Japan
Takeo Igarashi, *The University of Tokyo*, Japan

We present a simple interface for interacting with home robots. The user can instruct a robot by sketching a path and action on a live (ceiling-mounted) camera view.

■ PAPERS | ROOM 302

EDUCATION AND SCIENCE

SESSION CHAIR: Wendy E. Mackay, *INRIA*

PAPER | Friend or Foe? Examining CAS Use in Mathematics Research

Andrea Bunt, Michael Terry, Edward Lank, *University of Waterloo*, Canada

Pen-math systems allow for natural input to mathematics engines, but is this what mathematicians need? We describe a qualitative study examining the work practices and tool use of nine mathematicians.

PAPER | Pathfinder: An Online Collaboration Environment for Citizen Scientists

Kurt Luther, *Georgia Institute of Technology*, USA
Scott Counts, Kristin B. Stecher, Aaron Hoff, Paul Johns, *Microsoft Research*, USA

Describes the design and evaluation of an online environment wherecitizen scientists can collaboratively analyze the data they collect. Can help citizen scientists engage more deeply in the scientific process.

PAPER | The TeeBoard: An Education-Friendly Construction Platform for E-Textiles and Wearable Computing

Grace Ngai, Stephen C.F. Chan, Joey C.Y. Cheung, Winnie W.Y. Lau, *Hong Kong Polytechnic University*, Hong Kong

Describes an educational toolkit that lowers the floor to the adoption ofe-textiles into educational computing. Can provide easy reconfigurability, reusability and debuggability.

■ PAPERS | ROOM 304

PERSONAL INFORMATION MANAGEMENT

SESSION CHAIR: William Jones, *University of Washington*

PAPER | It Feels Better Than Filing: Everyday Work Experiences in an Activity-Based Computing System

Stephen Voida, *University of Calgary*, Canada
Elizabeth D. Mynatt, *Georgia Institute of Technology*, USA

Presents results from an in-depth, longitudinal study of an activity-based computing system. Suggests design implications based on the appropriation of activity-based storage, activity tagging, and activity-aware collaboration tools.

PAPER | It's Not That Important: Demoting Personal Information of Low Subjective Importance using GrayArea

Ofer Bergman, Simon Tucker, *Sheffield University*, UK
Ruth Beyth-Marom, *The Open University of Israel*, Israel
Edward Cutrell, *Microsoft Research*, USA
Steve Whittaker, *Sheffield University*, USA

We designed and evaluated GrayArea a novel PIM UI. It allows users to demote files within folders so that they stay in context but don't compete for users' attention.

PAPER | Lightweight Tagging Expands Information and Activity Management Practices

Gerard Oleksik, *Instrata*, UK
Max L. Wilson, *University of Swansea*, UK
Craig Tashman, *Georgia Institute of Technology*, USA
Eduarda Mendes Rodrigues, Gabriella Kazai, Gavin Smyth, Natasa Milic-Frayling, *Microsoft Research*, UK
Rachel Jones, *Instrata*, UK

In-situ user study reveals that tagging of resources in the desktop environment provides alternative organizations of resources in the file system, supports emerging activities, and facilitates management of ephemeral information.

■ PAPERS | ROOM 306

CLICKING ON BUTTONS

SESSION CHAIR: Patrick Baudisch, *Hasso Plattner Institute & Microsoft Research*

PAPER | Motion-Pointing: Target Selection using Elliptical Motions

Jean-Daniel Fekete, *INRIA*, France
Niklas Elmqvist, *INRIA*, France/*Purdue University*, USA
Yves Guiard, *TELECOM ParisTech - CNRS*, France

Describes a novel selection technique based on imitating an elliptical moving pattern using the mouse. Helps on public displays where no pointer is available or where movement is costly.

PAPER | Providing Dynamically Changeable Physical Buttons on a Visual Display

Chris Harrison, Scott E. Hudson, *Carnegie Mellon University*, USA

We present a method for constructing visual displays with dynamic deformable areas. These displays offer the graphical flexibility of touch screens with the tactile performance of physical button interfaces.

PAPER | The Performance of Touch Screen Soft Buttons

Seungyon Lee, *Georgia Institute of Technology*, USA
Shumin Zhai, *IBM Almaden Research Center*, USA

Contributes empirical knowledge and understanding of soft button performance in the new era of touch screen devices, including the impact of sensor type, stylus vs finger use, and button size.

■ INVITED DISCUSSION | ROOM 309

REAL LIFE AND REAL WORK: REAL EXPERIENCES NEGOTIATING THE COMPETING NEEDS OF ILLNESS, DISABILITY, CHILDREN, AND WORK

SESSION CHAIRS:
Jennifer Mankoff, *Carnegie Mellon University*, USA
Jaime Teevan, *Microsoft Research*, USA
Benjamin B. Bederson, *University of Maryland*, USA

■ SPECIAL INTEREST GROUP | ROOM 310

END USER SOFTWARE ENGINEERING

ORGANIZERS:
Brad A. Myers, *Carnegie Mellon University*, USA
Margaret M. Burnett, *Oregon State University*, USA
Susan Wiedenbeck, *Drexel University*, USA
Andrew J. Ko, *University of Washington*, USA
Mary Beth Rosson, *Pennsylvania State University*, USA

■ PAPERS/NOTES | ROOM 311

PRIVACY AND TRUST

SESSION CHAIR: Jason Hong, *Carnegie Mellon University*

PAPER | Timing Is Everything? The Effects of Timing and Placement of Online Privacy Indicators

Serge Egelman, Janice Y. Tsai, Lorrie Faith Cranor, Alessandro Acquisti, *Carnegie Mellon University*, USA

We examined the impact of the placement and timing of privacy indicators on online purchase behavior in the laboratory by controlling price, item type, and privacy levels of vendor websites.

NOTE | Designing Trustworthy Situated Services: An Implicit and Explicit Assessment of Locative Images Effect on Trust

Vassilis Kostakos, Ian Oakley, *University of Madeira*, Portugal

We consider a visual design element unique to situated, hot-spot style services: locativeness. Combining implicit association testing and conjoint analysis we compare locativeness, branding and quality in terms of trust.

NOTE | Social Computing Privacy Concerns: Antecedents and Effects

Oded Nov, *New York University Polytechnic Institute*, USA
Sunil Wattal Wattal, *Temple University*, USA

CHI researchers often study why people share information. We present a model that explains antecedents and consequences of community members privacy concerns, addressing the opposite question: why don't they?

TOCHI PAPER | From Privacy Methods to A Privacy Toolbox: Evaluation Shows that Heuristics are Complementary

Giovanni Iachello, *McKinsey & Co.*, USA
Gregory D. Abowd, *Georgia Institute of Technology*, USA

"Magic wands" that solve all the privacy concerns of your users are widely available but rarely work. Using a "privacy toolbox" might be more effective than any single approach.

■ **CASE STUDIES | ROOM 312**

SPECIFIC USER POPULATIONS

SESSION CHAIR: Joanna McGrenere, *University of British Columbia*

Acquiring a Professional Second Life: Problems and Prospects for the Use of Virtual Worlds in Business

Katherine Bessière, *Carnegie Mellon University*, USA
Jason B. Ellis, Wendy A. Kellogg, *IBM T.J. Watson Research Center*, USA

Bringing Web 2.0 to Government Research: A Case Study

Francesca Barrientos, *RIACS*, USA
Elizabeth Foughty, *MCT, Inc.*, USA
Dawn McIntosh, *NASA Ames Research Center*, USA
Bryan Matthews, *Perot Systems, Inc.*, USA

Designing for and with Diaspora: A Case Study of Work for the Truth and Reconciliation Commission of Liberia

Michael L. Best, Thomas N. Smyth, Daniel Serrano-Baquero, John Etherton, *Georgia Institute of Technology*, USA

■ PAPERS | BALLROOM A

SUSTAINABILITY 1

SESSION CHAIR: Eli Blevis, *Indiana University, Bloomington*

PAPER | A Sustainable Identity: The Creativity of an Everyday Designer

Ron Wakkary, Karen Tanenbaum, *Simon Fraser University*, Canada

Presents a sustainable identity for users based on an ethnographic study that illustrate design-in-use: the creative and sustainable ways people appropriate and adapt designed artifacts.

PAPER | A Vehicle for Research: Using Street Sweepers to Explore the Landscape of Environmental Community Action

Paul M. Aoki, *Intel Research*, USA
R.J. Honicky, *Intel Research/University of California, Berkeley*, USA
Alan Mainwaring, Chris Myers, *Intel Research*, USA
Eric Paulos, *Intel Research/Carnegie Mellon University*, USA
Sushmita Subramanian, Allison Woodruff, *Intel Research*, USA

Qualitative field research describing stakeholder perspectives in environmental air quality management. Draws on insights from a mobile environmental sensing deployment to provide guidance to researchers in framing similar interventions.

PAPER | Nourishing the Ground for Sustainable HCI: Considerations from Ecologically Engaged Art

Carl DiSalvo, *Georgia Institute of Technology*, USA
Kirsten Boehner, Nicholas A. Knouf, Phoebe Sengers, *Cornell University*, USA

Provides a discussion ecologically engaged arts practices and discourse as a starting point for undertaking new kinds of research in sustainable HCI and HCI in general.

■ DESIGN COMMUNITY EVENTS | BALLROOM B

INVITED TALK: JAN CHIPCHASE, *NOKIA, INC.*

SESSION CHAIR: Robert Fabricant, *frog design*

Designing for Global Impact: A Conversation with Nokia's Jan Chipchase on Effective Design Research in Cross-Cultural Mobile Markets.

Jan Chipchase is one of a team of researchers and anthropologists working at Nokia. Based within the design organization at Nokia, his job is to study people around the world - how they behave, communicate and interact with each other and the things around them. He shares his observations and insights with Nokia designers, who often accompany him on field trips, helping them to create new ideas for how mobile devices will look, work and be used in the future.

Most of his time is spent in the field conducting research projects. This takes him out onto the streets, into people's homes and public spaces to observe, document and analyze the rich tapestry of everyday life. Recent projects include visiting Uganda to look at shared phone use, several trips to India to look at how design can make mobile devices more accessible to people with low or non-existent levels of literacy and a study in South Korea looking at how early adopters were reacting to the then recently launched mobile TV.

His research focuses on the future three to fifteen years from now - understanding today's base human motivations, detecting early signals of new trends and combining this knowledge with an understanding of where technology is heading. The research is used by the design team together with a suite of other tools to help inform and inspire the design of future products, features, applications, services and platforms. In 2006 alone

■ PAPERS/NOTES | BALLROOM C

ACCESSIBILITY/SPECIAL NEEDS

SESSION CHAIR: Gregory Abowd, *Georgia Institute of Technology*

PAPER | A Longitudinal Study of People Learning to Use Continuous Voice-Based Cursor Control

Susumu Harada, Jacob O. Wobbrock, Jonathan Malkin, Jeff A. Bilmes, James A. Landay, *University of Washington*, USA

Presents results from a 2.5 week longitudinal study with participants with motor impairments learning to use the Vocal Joystick, a voice-based UI control system. Informs development of voice-driven interaction methods.

PAPER | An Enhanced Musical Experience for the Deaf: Design and Evaluation of a Music Display and a Haptic Chair

Suranga Nanayakkara, Elizabeth Taylor, Lonce Wyse, S. H. Ong, *National University of Singapore*, Singapore

Describes an integrated video and transcript critiquing system for bloggers and journalists engaged in watchdog journalism of online political video. Provides users with enhanced context and comprehensiveness of information quality.

NOTE | Fast Gaze Typing with an Adjustable Dwell Time

Päivi Majaranta, Ulla-Kaija Ahola, Oleg Špakov, *University of Tampere*, Finland

A longitudinal experiment investigating dwell time based gaze typing. Introduces a simple gaze controlled dial for dwell time adjustment and shows how fast gaze typing with QWERTY can be.

NOTE | How Well do Visual Verbs Work in Daily Communication for Young and Old Adults?

Xiaojuan Ma, Perry R. Cook, *Princeton University*, USA

This paper examines the effectiveness of four visual representations (single static images, panels of four images, animations, and videos) for conveying verbs in daily communication for young and old adults.

■ **PAPERS/NOTES | ROOM 302**

CREATIVE THOUGHT AND SELF-IMPROVEMENT

SESSION CHAIR: Jean-Baptiste Labrune, *Massachusetts Institute of Technology*

PAPER | Designing for the Self: Making Products that Help People Become the Person They Desire to Be

John Zimmerman, *Carnegie Mellon University*, USA

Promotes product attachment theory as a valuable experience design perspective. Analyzes several designs motivated by this theory and provides six framing constructs that help designers apply the theory in practice.

PAPER | Theory-Driven Design Strategies for Technologies that Support Behavior Change in Everyday Life

Sunny Consolvo, *Intel Research/University of Washington*, USA
David W. McDonald, *University of Washington*, USA
James A. Landay, *University of Washington/Intel Research*, USA

We propose design strategies for technologies that encourage behavior change in everyday life. We used our strategies to design a system, which was evaluated in two field studies.

NOTE | (Perceived) Interactivity: Does Interactivity Increase Enjoyment and Creative Identity in Artistic Spaces?

Amy L. Gonzales, Thomas Finley, Stuart Paul Duncan, *Cornell University*, USA

A music installation was used to test user experiences in interactive or non-interactive art settings. The study explores the psychological effects of the system on user enjoyment and creative identity.

NOTE | Learning from IKEA Hacking: I'm Not One to Decoupage a Tabletop and Call It a Day

Daniela K. Rosner, Jonathan Bean, *University of California, Berkeley*, USA

We present a study of IKEA hackers—people who reuse and customize IKEA products. We discuss the motivations for IKEA hacking and provide insights into contemporary changes in creative practice.

■ **PAPERS | ROOM 304**

TELEPRESENCE AND ONLINE MEDIA

SESSION CHAIR: Kenton OHara, *CSIRO ICT Centre*

PAPER | More than Face-to-Face: Empathy Effects of Video Framing

David T. Nguyen, *Accenture Technology Labs*, USA
John Canny, *University of California, Berkeley*, USA

An experimental study on the effects of framing on empathy formation in one-on-one video conferencing. Includes design guidelines based on findings.

PAPER | Movable Cameras Enhance Social Telepresence in Media Spaces

Hideyuki Nakanishi, Yuki Murakami, Kei Kato, *Osaka University*, Japan

Describes the design and user evaluation of a 'Haptic Chair' and visual display that in combination provide multi-sensory input aimed at enhancing the musical experience of people with hearing impairments.

PAPER | NewsCube: Delivering Multiple Aspects of News to Mitigate Media Bias

Souneil Park, Seungwoo Kang, Sangyoung Chung, Junehwa Song, *KAIST*, South Korea

We introduce an important problem to the HCI community, i.e., the media bias problem. Our work establishes a framework for discussion and elaborates a computational approach towards the problem.

■ **PAPERS/NOTES | ROOM 306**

LEARNING CHALLENGES

SESSION CHAIR: Julie Kientz, *University of Washington*

PAPER | Creating a Spoken Impact: Encouraging Vocalization through Audio Visual Feedback in Children with ASD

Joshua Hailpern, Karrie Karahalios, James Halle, *University of Illinois at Urbana-Champaign*, USA

The Spoken Impact Project (SIP) examines the effect of audio and visual feedback on vocalizations in low-functioning children with ASD by providing additional means of understanding/exploring their voice.

NOTE | Autism Online: A Comparison of Word Usage in Bloggers with and without Autism Spectrum Disorders

A. Taylor Newton, *University of Denver*, USA
Adam D. I. Kramer, *University of Oregon*, USA
Daniel N. McIntosh, *University of Denver*, USA

We utilize an unobtrusive method to study the on-line social and communicative skills of individuals with ASD compared to neurotypical individuals in a distal communications medium (blogging).

NOTE | Design of Haptic Interfaces for Therapy

Cati Vaucelle, Leonardo Bonanni, Hiroshi Ishii, *Massachusetts Institute of Technology*, USA

Based on the most promising touch therapy protocols, we are presentingthe first devices that simulate touch through haptic devices to bring relief and assist clinical therapy for mental health.

TOCHI PAPER | An Integrated Approach for Modeling Learning Patterns

Sherry Chen, Xiaohui Liu, *Brunel University*, UK

The key contribution of our study lies within the novel integration of data mining into HCI. We use data mining and traditional statistics to model the learning patterns of different cognitive styles.

■ **PANELS | ROOM 309**

GROWING UP PROGRAMMING: DEMOCRATIZING THE CREATIONS OF DYNAMIC, INTERACTIVE MEDIA

PANELISTS:
Mitchel Resnick, *Massachusetts Institute of Technology*, USA
Mary Flanagan, *Dartmouth College*, USA
Caitlin Kelleher, *Washington University*, USA
Matthew MacLaurin, *Microsoft Research*, USA
Yoshiki Ohshima, *Viewpoints Research Institute*, USA
Ken Perlin, Robert Torres, *New York University*, USA

Young people interact with games, animations, and simulations all of the time. But few of them are able to create interactive media. The obstacle: traditional programming languages are too difficult to learn and understand. This panel brings together a group of researchers, developers, and educators who are aiming to democratize the activity of programming. They are developing a new generation of programming environments that enable children and teens to create their own interactive games, stories, animations, and simulations. Panelists will discuss and critique their programming environments, and will set up interactive demonstration stations for focused exploration and small-group discussion. Audience members will also have the opportunity to download the environments onto their own laptops, so that they can experiment in greater depth.

■ SPECIAL INTEREST GROUP | ROOM 310

DESIGNING FOR FAMILIES

ORGANIZERS:
Carman Neustaedter, *Kodak Research Labs*, USA
Svetlana Yarosh, *Georgia Institute of Technology*, USA
A.J. Bernheim Brush, *Microsoft Research*, USA

■ PAPERS | ROOM 311

TANGIBLES ON TABLES

SESSION CHAIR: Robert Jacob, *Tufts University*

PAPER | Dynamic Mapping of Physical Controls for Tabletop Groupware

Rebecca Fiebrink, *Princeton University*, USA
Dan Morris, Meredith Ringel Morris, *Microsoft Research*, USA

We present an approach that enhances precision and feedback for tabletop systems by integrating dynamically re-mappable physical controllers into multi-touch environments; we demonstrate this approach in a collaborative audio editor.

PAPER | SLAP Widgets: Bridging the Gap Between Virtual and Physical Controls on Tabletops

Malte Weiss, Julie Wagner, Yvonne Jansen, *RWTH Aachen University*, Germany
Roger Jennings, Ramsin Khoshabeh, James D. Hollan, *University of California, San Diego*, USA
Jan Borchers, *RWTH Aachen University*, Germany

SLAP Widgets are transparent general-purpose tangible controls for multi-touch tables made from silicone and acrylic. They are low-cost and untethered, and combine the benefits of dynamic relabeling and tactile feedback.

PAPER | Touch and Toys: New Techniques for Interaction with a Remote Group of Robots

Cheng Guo, James Everett Young, Ehud Sharlin, *University of Calgary*, Canada

We explored tabletop interfaces that allow users to interact with a group of robots. Our first method is based on touch, and the second on plush toy TUIs.

■ alt.chi | ROOM 312

FEEL THE LOVE, LOVE THE FEEL

SESSION CHAIR: Jofish Kaye, *Cornell University*

Burn Your Memory Away: One-time Use Video Capture and Storage Device to Encourage Memory Appreciation

Pei-yu Chi, Xiao Xiao, Keywon Chung, Carnaven Chiu, *Massachusetts Institute of Technology*, USA

Interactive Slide: An Interactive Playground to Promote Physical Activity and Socialization of Children

Joan Soler-Adillon, Narcis Pares, *Universitat Pompeu Fabra*, Spain

Opportunities for Actuated Tangible Interfaces to Improve Protein Study

Ashlie Brown, *Georgia Institute of Technology*, USA
Hayes Raffle, *Nokia Research Center*, USA

soft(n): Towards a Somaesthetics of Touch

Thecla Schiphorst, *Simon Fraser University*, Canada

Stress OutSourced: A Haptic Social Network via Crowdsourcing

Keywon Chung, Carnaven Chiu, Xiao Xiao, Pei-yu Chi, *Massachusetts Institute of Technology*, USA

COURSE 6 | ROOM 206

DRAWING IDEAS: HAND-GENERATED SKETCHING FOR INTERACTION DESIGN

11:30 - 18:00

INSTRUCTORS:
Mark Baskinger, *Carnegie Mellon University*, USA
Wiliam Bardel, *Luminant Design*, USA

Benefits: This course is about collaborative processes and engaging tools that you can use to become a better visual communicator in creative brainstorming or problem solving. During this course we will investigate the development of sketches, doodles, and handwritten notes that are the first expressions of great ideas and the road maps of how to get there. We will help you visualize their potential as we discuss and learn a few of the ways to capture, organize and share them with others.

Audience: Participants need no prerequisite knowledge of the subject, but must exhibit interest and a desire to incorporate hand sketching into their design processes. This course is for both novice and seasoned professionals/academics, introducing both basic themes and new approaches to sketching and notation. Openness to discussion, full course attendance and having fun is mandatory.

COURSE 3 | ROOM 207

GIVING CHILDREN A VOICE IN THE DESIGN OF TECHNOLOGY: METHODS AND STRATEGIES

11:30 - 16:00

INSTRUCTORS:
Allison Druin, *University of Maryland*, USA
Mona Leigh Guha, *University of Maryland*, USA
Jerry Alan Fails, *University of Maryland*, USA

Benefits: When children are given a voice in the design of technology, their viewpoints, experiences, and needs can be supported. In this course we will introduce methods in designing new technologies with and for children. Attendees will participate in hands-on activities using each method, and will experience what designing with kids can truly be like using live simulation techniques. Each technique will be given a context by presenting technologies that have been developed with that method. Attendees will leave the course having been introduced to or updated on codesign methods that can lead to the best possible new technologies for children. This course has been updated from the CHI 2008 course to include new methods, techniques, and examples.

Audience: The audience for this course requires no special background. We view design as most effective when it is interdisciplinary; therefore, we welcome and encourage attendance by industry professionals, academics, and students from a wide variety of communities (e.g., design, computer science, information studies, and psychology).

COURSE 4 | ROOM 208

INNOVATIONS IN CARD SORTING: A HANDS-ON APPROACH

11:30 - 16:00

INSTRUCTOR:
William Hudson, *Syntagm Ltd, Abingdon*, UK

Benefits: This half-day hands-on course is the first opportunity for a CHI audience to try first-hand an innovative range of techniques to maximum the benefits of card sorting as applied to information architecture. The techniques range from the use of barcodes to expedite the data capture from paper card sorts through to new methods of analysis that extend and complement traditional approaches such as cluster analysis.

Audience: Web and intranet designers, information architects, usability and HCI professionals interested in the practical application of card sorting. No specialist skills or knowledge are required.

COURSE 5 | ROOM 210

AVOIDING WE CAN'T CHANGE THAT!: AN INTRODUCTION TO USABILITY & SOFTWARE ARCHITECTURE

11:30 - 16:00

INSTRUCTORS:
Bonnie E. John, *Carnegie Mellon University*, USA
Len Bass, *Carnegie Mellon University*, USA
Elspeth Golden, *Carnegie Mellon University* USA

Benefits: Participants in this course will

- Understand basic principles of software architecture for interactive systems and their relationship to the usability of those systems
- Be able to evaluate whether common usability scenarios will arise in the systems they are developing so that the impact arising from these concerns can be considered at architecture design time.
- Understand patterns of software architecture that facilitate usability
- Be able to recognize architectural decisions that preclude usability of the end-product, so that they can effectively bring usability considerations into early architectural design.

Audience: Usability professionals desiring more involvement with early software decisions. Software developers who want to understand the usability implications of architectural decisions. No prior knowledge of software architecture is required.

COURSE 26 | ROOM 207

TOP FIELD INTERVIEWING MISTAKES: RECOGNIZING AND PREVENTING THEM

16:30 - 18:00

INSTRUCTOR:
Karen Holtzblatt, *InContext Enterprises*, USA

Benefits: Conducting interviews with customers and end users is now considered a standard practice. Few organizations argue against interviewing customers; the battle has been won that we must be able to talk to our customers. However, finding time and resources to go out to customers isn't easy, so we must be sure we're getting the most out of those interviews.

But what makes an effective interview? Is it worth doing a field interview if it's a traditional question and answer session with a set of prepared questions? And even if you're trained in an interview method like Contextual Inquiry that relies on observation, not prepared questions, it can be easy to fall back into old patterns that aren't Contextual Inquiry. You're asking questions and the user answers you, but you aren't seeing them do real work. The user is either giving you one-word answers, or long explanations about what he or she "typically" does. You sense you've fallen into an unproductive interview pattern but you can't seem to get out of it.

The Top Mistakes format serve as a framework to explain the underlying principles of Contextual Inquiry interviewing and point out the most common or problematic pitfalls that interviewers can fall into. Attendees will learn tested techniques for getting the most out of interviews with users, which they can both use for improving their own skills and as a framework for assisting others in their organizations. The course also provides practical tips for interviewing and interviewing style characterizations that illustrate ineffective styles.

Audience: No specific background is required. It is appropriate for all roles.

COURSE 8 | ROOM 208

ADDRESSING VALUE TENSIONS DURING THE DESIGN PROCESS

16:30 - 18:00

INSTRUCTORS:
Alan Borning, *University of Washington*, USA
Batya Friedman, *University of Washington*, USA
Lisa P. Nathan, *University of Washington*, USA

Benefits: Through this course attendees will learn methods for identifying and addressing value tensions during the design and implementation of interactive technologies. Specifically, the course will focus on strategies for navigating the tensions between security and privacy.

Audience: No specific background is required. It is anticipated that the course will be of primary interest to design practitioners, educators, and researchers who want to learn an established method for identifying and addressing value tensions.

COURSE 9 | ROOM 210

THE PSYCHOLOGICAL BASIS FOR UI DESIGN RULES

16:30 - 18:00

INSTRUCTOR:
Jeff Johnson, *UI Wizards, Inc.,* USA

Benefits: UI design rules, guidelines, and heuristics are not simple recipes to be applied mindlessly. Applying them effectively requires determining their applicability (and precedence) in specific situations. It also requires balancing the trade-offs that inevitably arise in situations when design rules appear to contradict each other. By understanding the underlying psychology for the design rules, designers and evaluators enhance their ability to interpret and apply them. Explaining that psychology is the focus of this course.

Audience: Software designers and developers of all experience levels, especially those who did not take cognitive psychology in college. Also: Q/A engineers, usability testers, and managers.


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Notes

Tuesday

= 15 minutes = 30 minutes = unscheduled time

	8:15–9:00	9:00–10:30	11:30–13:00	14:30–16:00	16:30–18:00
Ballroom A		Papers/Notes Non-traditional Interaction Techniques Page 42	Papers User Experience Page 46	Papers/Notes Security Page 50	Papers Tabletop Gestures Page 54
Ballroom B	CHI MADNESS Page 42	Panels Mobile Technologies for the World's Children Page 42	Paper + Invited Panel Scientometric Analysis of the CHI Proceedings Page 46	Paper + Invited Panel The Status of Ethnography in Systems Design Page 50	Design Community Events Engineering Community: User Experience in Open Source Page 54
Ballroom C		Papers Computer Mediated Communication 1 Page 42	Papers Cross Culture CMC Page 46	Papers Programming Tools and Architectures Page 50	Papers Sustainability 2 Page 54
Room 302		Papers In the Living Room Page 43	Papers In the Home Page 47	Papers/Notes Techniques for Mobile Interaction Page 51	Papers/Notes Visualization 1 Page 55
Room 304		Papers Information Foraging Page 43	Papers Q&A Systems Page 47	Papers Social Networking Sites Page 51	Papers Design Theory Page 55
Room 306		Papers/Notes Prototyping and Interaction Page 44	Papers Looking at Videos Page 48	Papers Software Developers and Programmers Page 52	Papers New Media Experiences 1 Page 56
Room 309		Papers Understanding UI 1 Page 44		Design Community Forum Page 52	Panels Figuring out the "One Thing" that... Page 56
Room 310		Engineering Community Forum Page 44	SIG Integrating User Experience into Free/Libre/Open Source Software Page 48	SIG Usable Intelligent Interactive Systems Page 52	
Room 311		Papers Metrics Page 44	Papers Art Creation Page 48	Papers/Notes Large Displays/Multi-Display Environments Page 52	Design Community Events Designing for Expression Page 56
Room 312		Design Community Events Designing for Behavior Page 45	Interactivity On the Table Page 49	Case Studies New Usability Metrics and Methods Page 53	alt.chi Life, Love, Death Page 57
Room 206		Course 13 Web Design for Usability Page 58			
Room 207		Course 10 Understanding Users in Context: Fieldwork in User-Centered Design Page 58			
Room 208					
Room 210		Course 12 Empirical Research Methods for Human-Computer Interaction Page 58		Course 14 Building Affinity Diagrams to Reveal User Needs and Engage Stakeholders Page 59	

Commons/Hall D	Special Events			
Exhibits, Interactivity, & Info Booth 10:30–18:00	Spotlight on Work-in-Progress Posters (#1-95) 10:30–11:30 Hall C	Job Fair 18:00–20:00 Commons	Video Showcase 18:30–20:00 Ballroom A/B	Design Vignette Demos 19:30–21:00 Room 302

■ CHI MADNESS | BALLROOM B

8:15-9:00

SESSION CHAIRS:
Jeffrey Nichols, *IBM Research*
Mira Dontcheva, *Adobe Advanced Technology Labs*

CHI Madness, now in its fourth year, returns to give everyone a lightning speed overview of the day's program.

■ PAPERS/NOTES | BALLROOM A

NON-TRADITIONAL INTERACTION TECHNIQUES

SESSION CHAIR: Tico Ballagas, *Nokia Research Center*

PAPER | Fly: A Tool to Author Planar Presentations

Leonhard Lichtschlag, Thorsten Karrer, Jan Borchers, *RWTH Aachen University*, Germany

Descibes a slide-free technique for the authoring of presentation documents and studies a prototype in use. Can help to improve flexibility and overview for the author.

PAPER | Hand Occlusion with Tablet-sized Direct Pen Input

Daniel Vogel, *University of Toronto/Mount Allison University*, Canada
Matthew Cudmore, *Mount Allison University*, Canada
Géry Casiez, *University of Lille*, France
Ravin Balakrishnan, *University of Toronto*, Canada
Liam Keliher, *Mount Allison University*, Canada

Presents experimental results and a geometric model for the area and shape of hand occlusion in tablet-sized direct pen input devices. Can assist designers when constructing interfaces which minimize occlusion.

NOTE | Text Entry Performance of State of the Art Unconstrained Handwriting Recognition: A Longitudinal User Study

Per Ola Kristensson, Leif C. Denby, *University of Cambridge*, UK

User study of text entry performance of unconstrained handwriting recognition in comparison to a QWERTY software keyboard baseline. Shows that unconstrained handwriting recognition is faster than previously assumed.

NOTE | Wetpaint: Scraping Through Multi-Layered Images

Leonardo Bonanni, Xiao Xiao, Matthew Hockenberry, Praveen Subramani, Hiroshi Ishii, *Massachusetts Institute of Technology*, USA
Maurizio Seracini, Jurgen Schulze, *University of California, San Diego*, USA

We present a technique inspired by art restoration for scraping away free-form areas from the layers of an image to identify differences and uncover relationships.

■ PANELS | BALLROOM B

MOBILE TECHNOLOGIES FOR THE WORLD'S CHILDREN

PANELISTS:
Allison Druin, *University of Maryland*, USA
David Cavallo, *One Laptop Per Child*, USA
Christopher Fabian, *UNICEF*, USA
Benjamin B. Bederson, *University of Maryland*, USA
Glenda Revelle, *Sesame Workshop*, USA
Yvonne Rogers, *Open University*, UK
Jim Gray, *LeapFrog Enterprises, Inc.*, USA

In this panel, academic and non-profit professionals will discuss their global perspectives on mobile technologies for the world's children. Panelists will explore issues concerning children's access to mobile devices, the decreasing age that children have access to these technologies, mobile innovations for learning, and challenges/opportunities in diverse countries. This interactive session will begin with each panelist giving a short summary of their work-to-date with children and various mobile applications. Then the panelists will be asked questions by children from different countries via pre-recorded video. Audience members will be invited to offer their thoughts and comments as well as the panelists during the video question period. Audience members will also be able to ask further questions throughout the panel discussion.

■ PAPERS | BALLROOM C

COMPUTER MEDIATED COMMUNICATION 1

SESSION CHAIR: Gloria Mark, *University of California, Irvine*

PAPER | Butler Lies: Awareness, Deception and Design

Jeffrey T. Hancock, Jeremy Birnholtz, Natalya Bazarova, Jamie Guillory, Josh Perlin, Barrett Amos, *Cornell University*, USA

Presents results from a field study of IM deception, and introduces "butler lies" – deceptions used to avoid new conversation, smoothly exit existing ones, or explain other communication behavior.

PAPER | In CMC We Trust: The Role of Similarity

TRUST

Lauren E. Scissors, Alastair J. Gill, Kathleen Geraghty, Darren Gergle, *Northwestern University*, USA

Experimental study describing the relationship between linguistic similarity and trust in text-based CMC. Discusses "good" and "bad" similarity and presents novel automated and manual language analysis techniques.

PAPER | Visualizing Real-Time Language-Based Feedback on Teamwork Behavior in Computer-Mediated Groups

Gilly Leshed, *Cornell University*, USA
Diego Perez, *Microsoft Corporation*, USA
Jeffrey T. Hancock, Dan R. Cosley, Jeremy Birnholtz, Soyoung Lee, Poppy L. McLeod, Geri Gay, *Cornell University*, USA

Experiment results show that dynamic feedback visualizations of team members' language use in a chatroom help groups reflect on and change their communication behavior during conversations.

■ PAPERS | ROOM 302

IN THE LIVING ROOM

SESSION CHAIR: Shwetak Patel, *University of Washington*

PAPER | Computer Usage in Daily Life

Thomas Beauvisage, *Orange Labs*, France

Presents household and individual profiles of computer usage at home, based on the automatic recording of PC usage from a wide representative panel over 19 months.

PAPER | Social Television Comes Home: A Field Study of Communication Choices and Practices in TV-Based Text and Voice Chat

Elaine M. Huang, Gunnar Harboe, Joe Tullio, Ashley Novak, Noel Massey, Crysta J. Metcalf, Guy Romano, *Motorola Research*, USA

Presents the findings of field deployment of STV3, a social television system that allows users to chat using voice or text while watching television. Increases communication and connectedness.

PAPER | Supporting the Social Uses of Television: Sociability Heuristics for Social TV

David Geerts, Dirk De Grooff, *IBBT / K.U.Leuven*, Belgium

Presents twelve heuristics for evaluating the sociability of social television, based on a competitive analysis of several applications. Helps designers to evaluate and design social interaction in social TV applications.

■ PAPERS | ROOM 304

INFORMATION FORAGING

SESSION CHAIR: Jeffrey Heer, *Stanford University*

PAPER | An Elementary Social Information Foraging Model

Peter Pirolli, *Palo Alto Research Center*, USA

A theoretical framework for social information foraging is sketched for making predictions about the effects of diversity, interference, and cost-of-effort on performance time, participation rates, and utility of discoveries.

PAPER | Remembrance of Things Tagged: How Tagging Effort Affects Tag Production and Human Memory

Raluca Budiu, *Nielsen Norman Group*, USA
Peter Pirolli, Lichan Hong, *Palo Alto Research Center*, USA

We apply information foraging theory and cognitive theory to model the beneficial impact of introducing a lower cost interaction tagging technique on tag production and human memory.

PAPER | Signpost from the Masses: Learning Effects in an Exploratory Social Tag Search Browser

Yvonne Kammerer, *Knowledge Media Research Center*, Germany
Rowan Nairn, Peter Pirolli, Ed H. Chi, *Palo Alto Research Center*, USA

Presents design of a tag-based exploratory system and experiment evaluating the effectiveness to support exploratory search and learning. Can help searchers learn and explore new domain areas using social search.

■ PAPERS/NOTES | ROOM 306

PROTOTYPING AND INTERACTION

SESSION CHAIR: Karrie Karahalios, *University of Illinois, Urbana-Champaign*, USA

NOTE | The People-Prototype Problem: Understanding the Interaction Between Prototype Format and User Group

Katherine M. Sellen, Micheal A. Massimi, Danielle M. Lottridge, Khai N. Truong, Sean A Bittle, *University of Toronto*, Canada

Study showing effects of prototype format on feedback across user groups. Results show format (video/storyboard) effects comprehension, psychological, and emotional access to a system concept especially among older adults.

TOCHI PAPER | The Anatomy of Prototypes: Prototypes as Filters, Prototypes as Manifestations of Design Ideas

Youn-Kyung Lim, *KAIST*, South Korea
Erik Stolterman, *Indiana University*, USA
Josh Tenenberg, *University of Washington*, USA

Although the role of prototypes is much discussed, a lack of knowledge about the fundamental nature of prototypes still exists. We propose an anatomy of prototypes to overcome this.

TOCHI PAPER | The Soft Properties of Interaction

Alessia Rullo, *University of Siena*, Italy

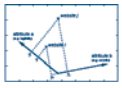
This work proposes a design methodology based on the Soft Qualities of Interaction. It explores the design of an incubator system for a non intrusive monitoring of premature babies in the fragile setting of neonatal care.

■ PAPERS | ROOM 309

UNDERSTANDING UI 1

SESSION CHAIR: Craig Ganoe, *The Pennsylvania State University*

PAPER | Accounting for Diversity in Subjective Judgments



Evangelos Karapanos, Jean-Bernard Martens, *Eindhoven University of Technology*, Netherlands
Marc Hassenzahl, *Folkwang University*, Germany

Argues against averaging as a common practice in the analysis of subjective judgments, both across and within subjects, and proposes a Multi-Dimensional Scaling approach that accounts for diversity.

TOCHI PAPER | Aesthetics and Experience-centred Design

Peter Wright, *Sheffield Hallam University*, UK
Jayne Wallace, *University of Newcastle*, UK
John McCarthy, *University College Cork*, UK

This paper offers an analysis of interaction as aesthetic experience. This is used to assess research into the aesthetics of interaction and offer insights into design as craft practice.

TOCHI PAPER | Strategy-Based Instruction: Lessons Learned in Teaching the Effective and Efficient Use of Computers

Suresh Bhavnani, *University of Michigan*, USA
Frederick A. Peck, *University of Colorado*, USA
Frederick Reif, *Carnegie Mellon University*, USA

Describes an empirically-validated approach called strategy-based instruction for teaching effective and efficient strategies to use complex computer applications. Can be used to teach strategic knowledge for a wide range of applications.

■ ENGINEERING COMMUNITY FORUM | ROOM 310

SESSION CHAIR: Scooter Morris, *University of California, San Francisco*

■ PAPERS | ROOM 311

METRICS

SESSION CHAIR: Dennis Wixon, *Microsoft*

PAPER | A Survey of Software Learnability: Metrics, Methodologies and Guidelines

Tovi Grossman, George Fitzmaurice, Ramtin Attar, *Autodesk Research*, Canada

We present a survey of software learnability research and a new question-suggestion evaluation protocol, which exposed a significantly higher number of learnability issues in comparison to a think-aloud protocol.

PAPER | Undo and Erase Events as Indicators of Usability Problems

David Akers, *Stanford University*, USA
Matthew Simpson, Robin Jeffries, *Google, Inc.*, USA
Terry Winograd, *Stanford University*, USA

An experiment demonstrates that undo and erase events are useful indicators of usability problems, for creation-oriented applications like Google SketchUp. This yields a new low-cost usability evaluation method, backtracking analysis.

■ DESIGN COMMUNITY EVENTS | ROOM 312

DESIGNING FOR BEHAVIOR

SESSION CHAIR: Mark Baskinger, *Carnegie Mellon University*

DESIGN METHODS | Designing the Melody of Interaction through Movies, Maps, Mechanisms, Prototypes and Presentations

Caroline Hummels, Kees Overbeeke, Michael Cruz, *Eindhoven University of Technology*, The Netherlands

DESIGN METHODS | Designing with Unconscious Human Behaviors for Eco-friendly Interaction

Minjung Sohn, Tekjin Nam, Woohun Lee, *KAIST*, South Korea

DESIGN METHODS | The Reflective Transformative Design Process

Caroline Hummels, Joep Frens, *Eindhoven University of Technology*, The Netherlands

■ PAPERS | BALLROOM A

USER EXPERIENCE

SESSION CHAIR: Mark Perry, *Brunel University*

PAPER | From Interaction to Trajectories: Designing Coherent Journeys Through User Experiences

Steve Benford, *The University of Nottingham*, UK
Gabriella Giannachi, *The University of Exeter*, UK
Boriana Koleva, Tom Rodden, *The University of Nottingham*, UK

Introduces a conceptual framework for analyzing and designing interactive experiences in terms of multiple continuous trajectories through hybrid structures of space, time, roles and interfaces.

PAPER | Understanding, Scoping and Defining User eXperience: A Survey Approach

Effie Lai-Chong Law, *University of Leicester*, UK
Virpi Roto, *Nokia Research Center*, Finland
Marc Hassenzahl, *Folkwang University*, Germany
Arnold P.O.S. Vermeeren, *Delft University of Technology*, The Netherlands
Joke Kort, *TNO Information & Communication Technology*, The Netherlands

To gain a common agreement on the nature of UX is challenging. Outcomes of our survey completed by 275 respondents lay the ground for further understanding, scoping and defining UX.

PAPER | User Experience Over Time: An Initial Framework

Evangelos Karapanos, *Eindhoven University of Technology*, The Netherlands
John Zimmerman, Jodi Forlizzi, *Carnegie Mellon University*, USA
Jean-Bernard Martens, *Eindhoven University of Technology*, The Netherlands

Five-week ethnographic study of iPhone's adoption. Provides empirical findings on the differences between initial and prolonged experiences and proposes a framework of temporality of experience.

■ PAPER + INVITED PANEL | BALLROOM B

SCIENTOMETRIC ANALYSIS OF THE CHI PROCEEDINGS

SESSION CHAIR: Jonathan Grudin, *Microsoft Research*

PAPER | Scientometric Analysis Of The CHI Proceedings

Christoph Bartneck, Jun Hu, *Eindhoven University of Technology*, The Netherlands

PANELISTS:
Danah Boyd, *Microsoft Research*, USA
Gilbert Cockton, *University of Sunderland*, USA
Robert Kraut, *Carnegie Mellon University*, USA

We provide a historical overview of the CHI conference. We present rankings of organizations & countries and analyze the success of the best paper award.

■ PAPERS | BALLROOM C

CROSS CULTURE CMC

SESSION CHAIR: Darren Gergle, *Northwestern University*

PAPER | Cultural Difference and Adaptation of Communication Styles in Computer-Mediated Group Brainstorming

Hao-Chuan Wang, Susan Fussell, Leslie Setlock, *Cornell University*, USA

Presents a laboratory study showing how culture and media influence group brainstorming. Provides insights into intercultural computer-mediated communication processes and informs the design of new technologies for intercultural communication.

PAPER | Difficulties in Establishing Common Ground in Multiparty Groups using Machine Translation

Naomi Yamashita, *NTT Communication Science Lab.*, Japan
Rieko Inaba, *National Institute of Information and Communications Technology*, Japan
Hideaki Kuzuoka, *University of Tsukuba*, Japan
Toru Ishida, *National Institute of Information and Communications Technology/Kyoto University*, Japan

This paper provides a detailed understanding of the difficulties of using machine translations to mediate communication in three-person multilingual groups.

PAPER | Resilience Through Technology Adoption: Merging the Old and the New in Iraq

Gloria J. Mark, Ban Al-Ani, Bryan Semaan, *University of California, Irvine*, USA

This paper identifies properties of resilience in a war environment related to the use of technology. This study can benefit practitioners in facilitating technology adoption to be used in crises.

■ PAPERS | ROOM 302

IN THE HOME

SESSION CHAIR: A.J. Brush, *Microsoft Research*

PAPER | Computer Help at Home: Methods and Motivations for Informal Technical Support

Erika Shehan Poole, Marshini Chetty, Tom Morgan, Rebecca E. Grinter, W. Keith Edwards, *Georgia Institute of Technology*, USA

We studied why and how people provide computer help to their friends and family.

PAPER | Extraordinary Computing: Religion as a Lens for Reconsidering the Home

Susan P. Wyche, Rebecca E. Grinter, *Georgia Institute of Technology*, USA

We present results from a study examining how Christians' faith affects their domestic life. Findings motivated "extraordinary computing" or systems that honor the value accorded to aspects of home life.

TOCHI PAPER | Making Place for Clutter and Other Ideas of Home

Alex S. Taylor, *Microsoft Research Cambridge*, UK
Laurel Swan, *Royal College of Art*, UK
Richard Harper, *Microsoft Research Cambridge*, UK

Field study of household clutter and its containment. Uses insights to reflect on the social order in homes and the design of domestic technologies.

■ PAPERS | ROOM 304

Q&A SYSTEMS

SESSION CHAIR: David Millen, *IBM Research*

PAPER | Facts or Friends? Distinguishing Informational and Conversational Questions in Social Q&A Sites

F. Maxwell Harper, Daniel Moy, Joseph A. Konstan, *University of Minnesota*, USA

This research examines the differences between "conversational" and "informational" question-asking behavior in several online question and answer sites, learning in the process about linguistic and social indicators of information quality.

PAPER | mimir: A Market-Based Real-Time Question and Answer Service

Gary Hsieh, *Carnegie Mellon University*, USA
Scott Counts, *Microsoft Research*, USA

Presents a market-based real-time question and answer (Q&A) service. A controlled field experiment shows that market can improve Q&A quality but can reduce social exchanges important to a community.

PAPER | Questions in, Knowledge iN? A Study of Naver's Question Answering Community

Kevin Kyung Nam, Mark S. Ackerman, Lada A. Adamic, *University of Michigan*, USA

Case study of the structure, motivations for participation, and expertise distribution of a large general-purpose question-answering community Naver Knowledge-iN. Offers insights for future knowledge generating online communities.

■ PAPERS | ROOM 306

LOOKING AT VIDEOS

SESSION CHAIR: Stephen Brewster, *University of Glasgow*

PAPER | SmartPlayer: User-Centric Video Fast-Forwarding

Kai-Yin Cheng, Sheng-Jie Luo, Bing-Yu Chen, Hao-Hua Chu, *National Taiwan University*, Taiwan

We propose a new video interaction model based on the metaphor of "scenic car driving," which provides adaptive fast-forwarding to help people quickly browse videos with predefined semantic rules.

PAPER | Videolyzer: Quality Analysis of Online Informational Video for Bloggers and Journalists

Nicholas Diakopoulos, Sergio Goldenberg, Irfan Essa, *Georgia Institute of Technology*, USA

Describes an integrated video and transcript critiquing system for bloggers and journalists engaged in watchdog journalism of online political video. Provides users with enhanced context and comprehensiveness of information quality.

PAPER | What's Next?: Emergent Storytelling from Video Collections

Edward Yu-Te Shen, Henry Lieberman, Glorianna Davenport, *Massachusetts Institute of Technology*, USA

Describes a video editing system by introducing an analysis of documentary filmmaking and commonsense reasoning technology. It provides the experience of brainstorming about the story rather than editing the media.

■ SPECIAL INTEREST GROUP | ROOM 310

INTEGRATING USER EXPERIENCE INTO FREE/ LIBRE/OPEN SOURCE SOFTWARE

ORGANIZERS:
Daniel Schwartz, *Oracle Corporation*, USA
Allen Gunn, *Aspiration*, USA

■ PAPERS | ROOM 311

ART CREATION

SESSION CHAIR: Celine Latulipe, *University of North Carolina, Charlotte*

PAPER | Musink: Composing Music through Augmented Drawing

Theophanis Tsandilas, Catherine Letondal, Wendy E. Mackay, *INRIA / Université Paris-Sud*, France

Explores the creative use of paper in music composition and documents the design of a system that provides smooth transitions between paper drawings and music composition tools.

PAPER | Passive Photography from a Creative Perspective: "If I would just shoot the same thing for seven days, it's like... What's the point?"

Sara Ljungblad, *SICS Swedish Institute of Computer Science*, Sweden

Presents a study focusing on creative and meaningful experiences of a passive camera technology, called Sensecam. This is intended to guide the design of passive cameras intended for creative photography.

PAPER | Urban Pixels: Painting the City with Light

Susanne Seitinger, Daniel S. Perry, William J. Mitchell, *Massachusetts Institute of Technology*, USA

Urban Pixels demonstrate the potential of physically instantiated pixels for urban environments. They enable flexible, reconfigurable, unbounded, low-resolution, and responsive urban displays that blur the boundary between display and lighting.

■ **INTERACTIVITY | ROOM 312**

ON THE TABLE

SESSION CHAIR: Anastasia Bezerianos, *National ICT Australia & Ecole Central Paris*

CaraClock: An Interactive Photo Viewer Designed for Family Memories

Daisuke Uriu, Naruhiko Shiratori, Satoru Hashimoto, Shuichi Ishibashi, Naohito Okude, *Keio University*, Japan

FLUX, A Tilting Multi-Touch and Pen Based Surface

Jakob Leitner, James Powell, Peter Brandl, Thomas Seifried, Michael Haller, *Upper Austria University of Applied Sciences*, Austria
Bernard Doray, Paul To, *Nortel Networks*, Canada

IMPAD - An Inexpensive Multitouch Pressure Aquisition Device

Ilya Rosenberg, Alexander Grau, Charles Hendee, Nadim Awad, Ken Perlin, *New York University Media Research Lab*, USA

Occlusion-Aware Menu Design for Digital Tabletops

Peter Brandl, Jakob Leitner, Thomas Seifried, Michael Haller, *Upper Austria University of Applied Sciences, Austria*
Bernard Doray, Paul To, *Nortel Networks, Canada*

SLAP Widgets: Bridging the Gap Between Virtual and Physical Controls on Tabletops

Malte Weiss, Julie Wagner, *RWTH Aachen University*, Germany
Roger Jennings, *University of California, San Diego*, USA
Yvonne Jansen, *RWTH Aachen University*, Germany
Ramsin Khoshabeh, James D. Hollan, *University of California, San Diego*, USA
Jan Borchers, *RWTH Aachen University*, Germany

■ PAPERS/NOTES | BALLROOM A

SECURITY

SESSION CHAIR: Stuart Schechter, *Microsoft Research*

PAPER | A Comprehensive Study of Frequency, Interference, and Training of Multiple Graphical Passwords

Katherine M. Everitt, Tanya Bragin, James Fogarty, Tadayoshi Kohno, *University of Washington*, USA

Based on a study of 100 participants over five weeks, presents the first systematic examination of the effects of frequency, interference, and training on the use of multiple graphical passwords.

PAPER | Real Life Challenges in Access-control Management

Lujo Bauer, Lorrie Faith Cranor, *Carnegie Mellon University*, USA
Robert W. Reeder, *Microsoft Corporation*, USA
Michael K. Reiter, *University of North Carolina*, USA
Kami Vaniea, *Carnegie Mellon University*, USA

We present the results from interviews with managers of physical and file access-control policy for several organizations. We examine the challenges faced by these individuals and discuss possible solutions.

NOTE | Awareness, Training and Trust in Interaction with Adaptive Spam Filters

Henriette S.M. Cramer, Vanessa Evers, Maarten W. van Someren, Bob J. Wielinga, *University of Amsterdam*, The Netherlands

This user study identifies challenges in achieving awareness, understanding and trust for adaptive and non-adaptive spam filters. Concerns are raised for all adaptive, semi-autonomous systems that rely on user feedback.

NOTE | VibraPass - Secure Authentication Based on Shared Lies

Alexander De Luca, Emanuel von Zezschwitz, Henrich Hußmann, *University of Munich*, Germany

Describes a system that utilizes the vibration functionality of mobile devices to enable secure authentication on public terminals. Can significantly improve security while still being easy to use.

■ PAPER + INVITED PANEL | BALLROOM B

THE STATUS OF ETHNOGRAPHY IN SYSTEMS DESIGN

SESSION CHAIR: William Newman, *University College London Interaction Centre* (UCLIC)

PAPER | Ethnography Considered Harmful

Andrew Crabtree, Tom Rodden, Peter Tolmie, *University of Nottingham*, UK
Graham Button, *Sheffield Hallam University*, UK

This paper contributes to an assessment of ethnography in the design of computer systems by assessing the methodological felicity of new ethnographies.

PANELISTS:
William Gaver, *Goldsmiths College*, *University of London*, UK
Wendy Kellogg, *IBM Yorktown Heights*, USA
Tracey Lovejoy, *Microsoft Redmond*, USA

As computer technologies permeate further into society it becomes increasingly difficult to ensure that they are designed with that society's needs in mind. Ethnography has proved its effectiveness in informing such design projects, particularly when ethnographers have worked closely with design teams. But ethnographic knowledge needs to be available to all designers, as usability methods already are, if sound design decisions are to be made. How can this be achieved? A paper and a panel will each discuss recent developments and future prospects in this area. The paper will review the current state of ethnography in system design, and will identify some challenges with proposed new directions regarding their ability to make ethnographic knowledge methodically available to designers. A panel of experts will then discuss the paper and the contributions that it and other research make to advancing the role of ethnography in design.

■ PAPERS/NOTES | BALLROOM C

PROGRAMMING TOOLS AND ARCHITECTURES

SESSION CHAIR: Björn Hartmann, *Stanford University*

PAPER | ESPranto SDK: an Adaptive Programming Environment for Tangible Applications

Robert van Herk, Janneke Verhaegh, *Philips Research Europe*, The Netherlands
Willem F.J. Fontijn, *Serious Toys*, The Netherlands

The ESPranto SDK is a complete tool chain supporting development of tangible applications like educational games offering tailored flexibility and complexity for different users while maintaining one consistent programming paradigm.

PAPER | Support for Context-Aware Intelligibility and Control

Anind K. Dey, *Carnegie Mellon University*, USA
Alan Newberger, *Google, Inc.*, USA

Describes a toolkit supporting intelligibility and control in context-aware applications. Allows designers and programmers to build such applications with much less effort.

PAPER | VIGO: Instrumental Interaction in Multi-Surface Environments

Clemens Nylandsted Klokmose, *University of Aarhus*, Denmark
Michel Beaudouin-Lafon, *LRI - Université Paris-Sud & CNRS*, France

This paper presents a novel architecture for multi-surface interaction based on the concept of instrumental interaction. It shows how the architecture supports the implementation of interaction techniques such as pick-and-drop.

■ **PAPERS/NOTES | ROOM 302**

TECHNIQUES FOR MOBILE INTERACTION

SESSION CHAIR: Johnny Lee, *Microsoft Research*

PAPER | Graspables: Grasp-Recognition as a User Interface

Brandon T. Taylor, V. Michael Bove Jr., *Massach.usetts Institute of Technology*, USA

The Graspables demonstrate how grasp-recognition provides a new interface for portable devices and virtual environments. We discuss our hardware design along with various application scenarios and impressions.

PAPER | MicroRolls: Expanding Touch-Screen Input Vocabulary by Distinguishing Rolls vs. Slides of the Thumb

Anne Roudaut, *TELECOM ParisTech - CNRS/Alcatel-Lucent Bell Labs*, France
Eric Lecolinet, Yves Guiard, *TELECOM ParisTech - CNRS*, France

Describes and evaluates MicroRolls of the thumb, a so far unexploited category of stationary gestures that can be combined with thumb slides to enrich input vocabulary on touch-screen handheld devices.

NOTE | Unravelling Seams: Improvoing Mobile Gesture Recognition with Visual Feedback Techniques

Sven Kratz, *Deutsche Telekom Laboratories/TU*, Germany
Raphael Ballagas, *Nokia Research Center*, USA

Studies effect of filtered and non-filtered visual feedback on gesture recognition rate of mobile interface. Provides insights into design space of seamful design; identifies areas where seamlessness is advantageous.

NOTE | Where to Locate Wearable Displays? Reaction Time Performance of Visual Alerts from Tip to Toe

Chris Harrison, Brian Y. Lim, Aubrey Shick, Scott E. Hudson, *Carnegie Mellon University*, USA

Our study shows there are significant differences in how visual alerts distributed on the human body capture our attention. Presented results can aid in the design of future wearable display.

■ **PAPERS | ROOM 304**

SOCIAL NETWORKING SITES

SESSION CHAIR: Michael Muller, *IBM Research*

PAPER | Feed Me: Motivating Newcomer Contribution in Social Network Sites

Moira Burke, *Carnegie Mellon University*, USA
Cameron Marlow, Thomas Lento, *Facebook*, USA

Analysis of the social psychological factors that motivate newcomers to social networking sites to share content. Provides recommendations to designers of SNS for eliciting user contribution.

PAPER | "Helpfulness" in Online Communities: A Measure of Message Quality

Jahna Otterbacher, *University of Michigan*, USA

Analysis of information quality in postings at an online community and its correlation to users' ratings of content. Can assist participants and designers in using simple forms of social navigation.

PAPER | The Problem of Conflicting Social Spheres: Effects of Network Structure on Experienced Tension in Social Network Sites

Jens Binder, Andrew Howes, Alistair Sutcliffe, *University of Manchester*, UK

A survey study that highlights negative side-effects of social network sites, relates these effects to a theory of interaction within social spheres, and offers a general solution strategy.

■ **PAPERS | ROOM 306**

SOFTWARE DEVELOPERS AND PROGRAMMERS

SESSION CHAIR: Scott Klemmer, *Stanford University*

PAPER | Comparing the Use of Tangible and Graphical Programming Languages for Informal Science Education

Michael S. Horn, Erin Treacy Solovey, R. Jordan Crouser, Robert J.K. Jacob, *Tufts University*, USA

We present a study comparing a tangible and a graphical programming language for a science museum exhibit. The tangible interface is shown to have significant advantages for informal science education.

PAPER | Designers Wanted: Participation and the User Experience in Open Source Software Development

Paula M. Bach, *Pennsylvania State University*, USA
Robert DeLine, *Microsoft Research*, USA
John M. Carroll, *Pennsylvania State University*, USA

This research contributes to dismantling the social and technological barriers for UX designer participation in open source software by cultivating a community of practice that integrates UX practices in FLOSS.

PAPER | Understanding How and Why Open Source Contributors Use Diagrams in the Development of Ubuntu

Koji Yatani, *University of Toronto*, Canada
Eunyoung Chung, Carlos Jensen, *Oregon State University*, USA
Khai N. Truong, *University of Toronto*, Canada

Describes the use and practices associated with diagramming in the Ubuntu project and presents design considerations for systems seeking to better support diagram use in open-source software development.

■ **DESIGN COMMUNITY FORUM | ROOM 309**

SESSION CHAIR: Anijo Mathew, *Illinois Insitute of Technology*

■ **SPECIAL INTEREST GROUP | ROOM 310**

USABLE INTELLIGENT INTERACTIVE SYSTEMS

ORGANIZERS:
Aaron Spaulding, *SRI International*, USA
Krzysztof Z. Gajos, *Harvard University*, USA
Anthony Jameson, *FBK-irst*, Italy
Per Ola Kristensson, *University of Cambridge*, UK
Andrea Bunt, *University of Waterloo*, Canada
Will Haines, *SRI International*, USA

■ **PAPERS/NOTES | ROOM 311**

LARGE DISPLAYS/MULTI-DISPLAY ENVIRONMENTS

SESSION CHAIR: Jacob Biehl, *FXPAL*

PAPER | Comparing Usage of a Large High-Resolution Display to Single or Dual Desktop Displays for Daily Work

Xiaojun Bi, Ravin Balakrishnan, *University of Toronto*, Canada

Week-long study investigating large-display use in a personal desktop computing context. Reveal usage patterns in partitioning screen real estate and managing windows, and formulate guidelines for large-display interface design.

PAPER | DICE: Designing Conference Rooms for Usability

Gene Golovchinsky, Pernilla Qvarfordt, Bill van Melle, Scott Carter, Tony Dunnigan, *FX Palo Alto Laboratory, Inc.*, USA

Describes system for controlling a technologically-enhanced conference room. Analyzes over a year's worth of data of multi-presenter meetings to derive design guidelines.

NOTE | Arrow Tag: A Direction-Key-Based Technique for Rapidly Selecting Hyperlinks While Gazing at a Screen

Atsuhiko Maeda, Hirohito Inagaki, Masanobu Abe, *NTT Corporation*, Japan

Describes a new link selection technique for web browsers on TV. The technique can help people select any links by pushing the direction keys just a few times.

NOTE | "What's This" You Say? The Use of Local References on Distant Displays

Patti Bao, Darren Gergle, *Northwestern University*, USA

Study exploring how display size, controlling for field of view, influences language use and affects our interactions with visual environments. Informs the design of interactive technologies such as conversational agents.

■ **CASE STUDIES | ROOM 312**

NEW USABILITY METRICS AND METHODS

SESSION CHAIR: Robin Jeffries, *Google*

Beyond Usability: Evaluating Emotional Response as an Integral Part of the User Experience

Anshu Agarwal, *Salesforce.com*, USA
Andrew Meyer, *Stanford University*, USA

Open by Design: How IBM Partnered with the User Community in the Redesign of Lotus Notes

Elizabeth M. Comstock, Mary Beth Raven, Sheri F. Branco, Michelle L. Cooper, Deborah E. Maurer, *IBM*, USA

Perspective Probe: Many Parts Add Up to a Whole Perspective

Marianne Berkovich, *Google, Inc.*, USA

■ **PAPERS | BALLROOM A**

TABLETOP GESTURES

SESSION CHAIR: Kellogg Booth, *University of British Columbia*

PAPER | Empirical Evaluation for Finger Input Properties In Multi-touch Interaction

Feng Wang, Xiangshi Ren, *Kochi University of Technology*, Japan

This study investigates preferred hand finger properties and their potential integration into enhanced multi-touch interactions and offers guidelines and parameters for multi-touch interface design.

PAPER | The Design and Evaluation of Multi-Finger Mouse Emulation Techniques

Justin Matejka, Tovi Grossman, Jessica Lo, George Fitzmaurice, *Autodesk Research*, Canada

We systematically explore the design space of multifinger mouse emulation techniques, leading us to the design of SDMouse, which was shown to improve performance in comparison to previously developed techniques.

PAPER | User-Defined Gestures for Surface Computing

Jacob O. Wobbrock, *University of Washington*, USA
Meredith Ringel Morris, Andrew Wilson, *Microsoft Research*, USA

We present an approach to designing tabletop gestures that relies on eliciting gestures from non-technical users. We present a gesture set and gesture taxonomy based on this method's results.

■ **DESIGN COMMUNITY EVENTS | BALLROOM B**

ENGINEERING COMMUNITY: USER EXPERIENCE IN OPEN SOURCE

SESSION CHAIR: Scooter Morris, *University of California, San Francisco*

PARTICIPANTS:
Mike Beltzner, *Mozilla Corporation*, USA
Alex Faaborg, *Mozilla Corporation*, USA
Alonso Vera, *NASA Ames Research Center*, USA
Jeff Noyes, *Acquia*, USA
Becca Scollan, *University of Baltimore*, USA
Bonnie John, *Carnegie Mellon University*, USA

Open source applications have been growing in popularity for corporate, government, and home uses, and this trend is expected to continue in the future. Open source projects are typically seen as beginning with developers developing for themselves and what process exists is built upon a programmer-centric meritocracy. How do such projects launch products like Firefox and Drupal which show significant attention to the user and her overall experience? Are these projects unique, or is something changing with the development of open source applications? If things are changing, is there more of an opportunity for HCI to participate? If there is, why should we, and if we do why should our employers support such activities. This session will explore some of these questions with a focus on the changing open source development landscape and how HCI can participate. The session will consist of a mixture of presentation and panel formats. We will first hear from members of the Mozilla Corporation user experience team about how user experience fits into the development of Mozilla products such as Firefox and Thunderbird, then we will hear from a member of the HCI group at NASA Ames who will talk briefly about the government view of open source, and finally, we hear about how user experience is taken into account with the development of Drupal, an open source content management system. We will leave significant time for a panel discussion and questions from the audience.

■ **PAPERS | BALLROOM C**

SUSTAINABILITY 2

SESSION CHAIR: Elaine Huang, *Motorola Labs*

PAPER | It's Not Easy Being Green: Understanding Home Computer Power Management

Marshini Chetty, *Georgia Institute of Technology*, USA
A.J. Bernheim Brush, Brian R. Meyers, Paul Johns, *Microsoft Research*, USA

We present a mixed methods study of home computer power management to show how users engage power saving modes. We also determine reclaimable energy and monetary savings from wasted power.

PAPER | UbiGreen: Investigating a Mobile Tool for Tracking and Supporting Green Transportation Habits

Jon Froehlich, *University of Washington*, USA
Tawanna Dillahunt, *Carnegie Mellon University*, USA
Predrag Klasnja, *University of Washington/Intel Research*, USA
Jennifer Mankoff, *Carnegie Mellon University*, USA
Sunny Consolvo, Beverly Harrison, *Intel Research*, USA
James A. Landay, *University of Washington/Intel Research*, USA

We present the results of a 3-week field study of the UbiGreen prototype, a novel mobile phone application that semi-automatically senses and reveals information about transportation behavior.

PAPER | Understanding Why We Preserve Some Things and Discard Others in the Context of Interaction Design

William Odom,Pierce James, Erik Stolterman, Eli Blevis, *Indiana University at Bloomington*, USA

Applies a theoretical framework to observed examples in the service of construction of sustainable design principles.

■ **PAPERS/NOTES | ROOM 302**

VISUALIZATION 1

SESSION CHAIR: Maneesh Agrawala, *University of California, Berkeley*

PAPER | Improving Visual Search with Image Segmentation

Clifton Forlines, *Mitsubishi Electric Research Labs*, USA
University of Toronto, Canada
Ravin Balakrishnan, *University of Toronto*, Canada

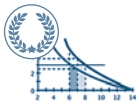
A new class of image presentation techniques is presented that leverages image segmentation. Three examples are described and shown to improve people's ability to search images for rare targets.

PAPER | PhotoScope: Visualizing Spatiotemporal Coverage of Photos for Construction Management

Fuqu Wu, Melanie Tory, *University of Victoria*, Canada

Designed and evaluated a novel visualization for browsing and searching space and time indexed photos. Identified design considerations for such a visualization, particularly for the construction claims domain.

NOTE | Graph Sketcher: Extending Illustration to Quantitative Graphs



Robin Stewart, *Massachusetts Institute of Technology*, USA
mc schraefel, *University of Southampton*, UK

Graph Sketcher integrates the data visualization techniques of charting programs with the direct manipulation techniques of vector graphics tools. This enables users to quickly create abstract quantitative diagrams.

NOTE | SiteLens: Situated Visualization Techniques for Urban Site Visits

Sean White, Steven Feiner, *Columbia University*, USA

We present and evaluate SiteLens, an augmented reality system and set of techniques for urban situated visualization, visualizing relevant virtual data directly in the context of physical sites.

■ **PAPERS | ROOM 304**

DESIGN THEORY

SESSION CHAIR: Youn-Kyung Lim, *KAIST*

PAPER | Design Research as Explanation: Perceptions in the Field

Steven R. Haynes, John M. Carroll, Thomas G. Kannampallil, Lu Xiao, Paula M. Bach, *Pennsylvania State University*, USA

We report empirical results from interviews with HCI design researchers on their perceptions of how their research relates to the more conventional scientific goal of providing explanations.

PAPER | Framing Design in the Third Paradigm

Salu Ylirisku, *The University of Art and Design Helsinki*, Finland
Virtu Halttunen, Johanna Nuojua, Antti Juustila, *University of Oulu*, Finland

Develops theoretical concepts for user-driven innovation. Can inform designers and design managers to support the fuzzy front-end of innovation design and assist design researchers in discussing innovation processes.

PAPER | Values as Lived Experience: Evolving Value Sensitive Design in Support of Value Discovery

Christopher A. Le Dantec, Erika Shehan Poole, Susan P. Wyche, *Georgia Institute of Technology*, USA

We present a critique of the Value Sensitive Design methodology, arguing for an increased focus on value discovery, an emphasis on empirical investigations, and more guidance on effective empirical instruments.

■ **PAPERS | ROOM 306**

NEW MEDIA EXPERIENCES 1

SESSION CHAIR: Andy Cockburn, *University of Canterbury*

PAPER | Body and Mind: A Study of Avatar Personalization in Three Virtual Worlds

Nicolas Ducheneaut, *Palo Alto Research Center*, USA
Ming-Hui Wen, *National Chiao-Tung University*, Taiwan
Nicholas Yee, *Palo Alto Research Center*, USA
Greg Wadley, *The University of Melbourne*, Australia

Reports on a survey of avatar customization practices in virtual worlds, showing how users reproduce (or not) some of their own physical and psychological traits into their virtual bodies.

PAPER | Capturing and Sharing Memories in a Virtual World

Carman Neustaedter, Elena Fedorovskaya, *Kodak Research Labs*, USA

Presents interview findings from Second Life that describe user routines for capturing and sharing memories of virtual activities; can spur creative design ideas for virtual worlds or real life.

PAPER | In Support of City Exploration

Ben Bedwell, Holger Schnädelbach, Steve Benford, Tom Rodden, Boriana Koleva, *University of Nottingham*, UK

Presents a city-exploration experience where visitors were followed and guided by unseen performers. Our observations result in implications for the support of professional and volunteer city guides.

■ **PANELS | ROOM 309**

FIGURING OUT THE "ONE THING" THAT WILL MOVE UX INTO A POSITION OF STRATEGIC RELEVANCE

PANELISTS:
Richard I. Anderson, *Riander*, USA
Killian Evers, *PayPal*, USA
Jim E. Nieters, *Yahoo!, Inc.*, USA
Laurie Pattison, *Oracle Corporation*, USA
Craig Peters, *Awasu Design*, USA

A common question asked of successful User eXperience (UX) leaders is what "one thing" they needed to do in order to move their organizations into a position of strategic relevance. However, the answers often vary, posing a challenge to those struggling to figure out how to achieve the same goal where they work. In this interactive session, a subset of answers will be highlighted, then real-world scenarios from around the globe – most presented by recruited conference attendees – will be evaluated to determine which "one thing" should be attempted in each case. The process of figuring that out will be explicitly addressed so that session attendees can leave better able to do so themselves for their own situations.

■ **DESIGN COMMUNITY EVENTS | ROOM 311**

DESIGNING FOR EXPRESSION

SESSION CHAIR: Anijo Mathew, *Illinois Institute of Technology*

DESIGN PRACTICE | Designing CALLY, a Cell-phone Robot

Ji-Dong Yim, Christopher Shaw, *Simon Fraser University*, Canada

DESIGN PRACTICE | More Than Kimchi and Cash: Designing for Cultural Identity

Kipum Lee, Shelley Evenson, *Carnegie Mellon University*, USA
Richard Buchanan, *Case Western Reserve University*, USA

DESIGN PRACTICE | ShapeWriter on the iPhone – From Laboratory to the Real World

Shumin Zhai, *IBM Almaden Research Center*, USA
Per Ola Kristensson, Pengjun 'Frank' Gong, Michael Greiner, Shilei 'Allen' Peng, Liang 'Mico' Liu, *ShapeWriter Inc.*, China
Anthony Dunnigan, *FX Palo Alto Laboratory*, Inc., USA

alt.chi | ROOM 312

LIFE, LOVE, DEATH

SESSION CHAIR: Daniel Wigdor, *Microsoft*

Designing for All Users -- Including the Odd Users

Jina Huh, Mark S. Ackerman, *University of Michigan*, USA

Dying, Death, and Mortality: Towards Thanatosensitivity in HCI

Mike Massimi, Andrea Charise, *University of Toronto*, Canada

Productive Love: A New Approach for Designing Affective Technology

Ramon Solves Pujol, Hiroyuki Umemuro, *Tokyo Institute of Technology*, Japan

Television on the Internet: New Practices, New Viewers

Louise Barkhuus, *University of California, San Diego*, USA

The Doctor as the Second Opinion and the Internet as the First

Lisa Neal Gualtieri, *Tufts University School of Medicine*, USA

COURSE 10 | ROOM 207

UNDERSTANDING USERS IN CONTEXT: FIELDWORK IN USER-CENTERED DESIGN

09:00 - 18:00

INSTRUCTOR:
Susan M. Dray, *Dray & Associates, Inc.*, USA

Benefits: You will learn how to plan for and carry out studies of users in the field. Rather than teaching a single way to do field research, we provide you with the tools to think critically about the many planning and methodological choices you will have to make. You will also have the chance to practice two types of observations (Naturalistic Observation and Contextual Inquiry) and will see video examples from actual fieldwork projects in a variety of settings and countries.

Audience: This hands-on session is aimed at practitioners doing, planning, and leading field research, including developers, designers, and managers who are responsible for user experience or user requirements identification. This is an introductory to intermediate level tutorial. It will be useful for beginners in fieldwork, as well as those with some experience who want to broaden their knowledge of approaches.

COURSE 12 | ROOM 210

EMPIRICAL RESEARCH METHODS FOR HUMAN-COMPUTER INTERACTION

09:00 - 13:00

INSTRUCTOR:
I. Scott MacKenzie, *York University*, Canada

Benefits: Participants in this course will benefit by learning how to conduct empirical research in human-computer interaction. As most attendees at CHI conferences will agree, a "user study" is the hallmark of good research in human-computer interaction. But, what constitutes a user study? By and large, a user study is an experiment conforming to the norms for empirical inquiry and the scientific method. It is founded on observation, measurement, and posing and answering testable research questions. This course delivers an A-to-Z tutorial on conducting an empirical experiment (aka user study) in human computer interaction.

Audience: This course is intended for members of the CHI community who are interested in learning about, or refining their skill in, empirical research methods in human-computer interaction (HCI). Prior knowledge of statistical tests is not required.

COURSE 13 | ROOM 206

WEB DESIGN FOR USABILITY

09:00 - 18:00

INSTRUCTOR:
William Hudson, *Syntagm Ltd*, UK

Benefits: This one-day workshop and tutorial on web design for usability explains how users interact with technology; how to discover, and design, for users' needs; and how to apply simple, but effective user-centered techniques such as goal mapping, paper prototyping and card-sorting.

The day is a balanced combination of tutorials, group exercises and discussions, ensuring that participants can gain a rich understanding of the problems presented by technology-focused design and how they can be addressed to improve usability.

Audience: Web and intranet designers, developers and managers. Usability and HCI professionals interested in the practical aspects of usable design. No specialist skills or knowledge are required.

COURSE 14 | ROOM 210

BUILDING AFFINITY DIAGRAMS TO REVEAL USER NEEDS AND ENGAGE STAKEHOLDERS

14:30 - 18:00

INSTRUCTOR:
Shelley Wood, *InContext Enterprises*, USA

Benefits: Affinity diagramming is fairly well known in the CHI community and used as a technique for organizing large amounts of information, especially qualitative data. However, the full potential of affinity diagramming – both as a technique for revealing design implications and as a powerful communication tool – is not being fully exploited.

Many people are building affinities through deductive reasoning, starting with an explicit or implicit set of categories and then slotting notes into the known categories. Building an affinity like this may organize the data, but doesn't tell you very much new about your customers, and also buries new insights or important distinctions in their work. Much more valuable affinities are instead built through a true bottoms-up method, driven by a process of inductive reasoning with the data suggesting the labels for the groups rather than predefined categories. This process exposes and makes concrete common issues, distinctions, work patterns, and needs without losing individual variation.

Organizations also run into logistical and team management problems during affinity building. Because they don't have an explicit process to follow, with guidelines for what works and what doesn't work for managing the process and the people involved, teams get overwhelmed and discouraged.

This course teaches how to build more powerful affinities, offers a process for managing organizational issues, and provides a mechanism for using the affinity as a communication tool across the organization.

Audience: No specific background is required. It is appropriate for all roles.

Notes

Wednesday

= 15 minutes = 30 minutes = unscheduled time

	8:15–9:00	9:00–10:30	11:30–13:00	14:30–16:00	16:30–18:00
Ballroom A		Papers/Notes Using Tabletops for Education, Science, and Media Page 62	Papers New Media Experiences 2 Page 66	Papers Usability Methods Page 70	Papers/Notes Social Search and Sensemaking Page 74
Ballroom B	CHI MADNESS Page 62	Panels Fault Lines of User Experience Page 62	Paper + Invited Panel The Beauty Dilemma Page 66	Panel Interacting with Health Page 70	Design Community Events Designing for Discovery Page 74
Ballroom C		Papers Classifying and Recommending Content Page 62	Papers/Notes Pointing and Cursor Techniques Page 66	Papers Software Development Page 70	Papers Mobile Applications for the Developing World Page 74
Room 302		Papers/Notes Helping Out Users with "Extreme Jobs" Page 63	Papers/Notes Personal and Online Information Page 67	Papers Studying Cell Phone Use Page 71	Papers/Notes Understanding UI 2 Page 75
Room 304		Papers Visualization 2 Page 63	Papers/Notes Studying Wikipedia Page 67	Papers/Notes Desktop Techniques Page 71	Papers Supporting Blind Users Page 75
Room 306		Papers/Notes User Studies and Design Page 64	Papers/Notes Multimodal Mobile Interaction Page 68	Papers Designing for Senior Citizens Page 72	Papers Advanced Web Scenarios Page 76
Room 309		Papers Cognitive Modeling and Assessment Page 64			
Room 310		SIG Agile User Experience Page 65	SIG Designing User Interfaces for Multi-Touch and Gesture Devices Page 68	SIG Design and Adoption of Social Collaboration within Businesses Page 72	User Experience Community Forum Page 76
Room 311		Papers Finding Info Online Page 65	Papers New Gaming Experiences Page 69	Papers/Notes Photos and Life Logging Page 72	Papers/Notes Enhancing Reality Page 76
Room 312		Design Community Events Design Panel Discussion with Malcolm McCullough Page 65	Interactivity Look, Hear, Wear Page 69	Case Studies Tools for UX Researchers Page 73	alt.chi Build a Better World Page 77
Room 206		Course 18 Developing Visual Models that Can Lead to Design Implications Page 78			
Room 207		Course 15 Beyond Anecdotes: Analyzing Qualitative Data from Field Studies Page 78			
Room 208		Course 16 3D User Interfaces: Design, Implementation, Usability Page 79			
Room 210		Course 17 Mobile Interaction Design Page 79		Course 19 Tips and Techniques for Measuring the User Experience Page 79	Course 20 Working with an Agile Team: The User Feedback Two-Step Page 79

Commons/Hall D	Special Events		
Exhibits, Interactivity, & Info Booth 10:30–18:00	Spotlight on Work-in-Progress Posters (#96-192) 10:30–11:30 Hall C	SIGCHI Membership Meeting 18:10–19:10 Room 310	Hospitality Events 18:30–20:30 Boston Marriott Copley Place

■ CHI MADNESS | BALLROOM B

8:15-9:00

SESSION CHAIRS:
Jeffrey Nichols, *IBM Research*
Mira Dontcheva, *Adobe Advanced Technology Labs*

CHI Madness, now in its fourth year, returns to give everyone a lightning speed overview of the day's program.

■ PAPERS/NOTES | BALLROOM A

USING TABLETOPS FOR EDUCATION, SCIENCE, AND MEDIA

SESSION CHAIR: Jan Borchers, *RWTCH Aachen University*

PAPER | Tabletop Displays for Small Group Study: Affordances of Paper and Digital Materials

Anne Marie Piper, James D. Hollan, *University of California, San Diego*, USA

Comparing group study with digital materials on a tabletop display to paper handouts showed that the tabletop display encouraged students to attempt problems before consulting answers and to repeat assignments.

PAPER | The WeSpace: The Design, Development, and Deployment of a Walk-Up and Share Multi-Surface Collaboration System

Daniel Wigdor, *Harvard University*, USA
Hao Jiang, *Mitsubishi Electric Research Labs*, USA / *Tsinghua University*, China
Clifton Forlines, *Mitsubishi Electric Research Labs*, USA
Michelle Borkin, Chia Shen, *Harvard University*, USA

WeSpace is a tool supporting collocated scientific collaboration. We describe the requirements derived from studies of astrophysicists, as well as the iterative design process and the implemented system.

NOTE | CThru: Exploration in a Video-Centered Information Space for Educational Purposes

Hao Jiang, *Harvard University/Tsinghua University*, USA
Alain Viel, *Harvard University*, USA
Meekal Bajaj, *Harvard University/Georgia Institute of Technology*, USA
Robert A. Lue, Chia Shen, *Harvard University*, USA

CThru provides enhanced exploratory video-based learning experience by 1) combining an omni-directional space of supplementary information with a sequential story-telling video, and 2) introducing multiple display form-factors to the environment.

NOTE | Turning the Tables: An Interactive Surface for VJing

Stuart Taylor, Shahram Izadi, David S. Kirk,
Richard Harper, Armando Garcia-Mendoza, *Microsoft Research Cambridge*, UK

VPlay is an interactive multi-touch surface designed to open up the practice of VJing, encouraging new creative dialogues to be formed between VJs and members of the audience.

■ PANELS | BALLROOM B

FAULT LINES OF USER EXPERIENCE

PANELISTS:
Daniela K. Busse, *SAP Labs*, USA
Heather Fraser, *University of Toronto*, Canada
Carola Fellenz Thompson, *SAP Labs*, USA
Lesley Allan, *Microsoft Corporation*, USA
Patricia Hallstein, *The Economist*, USA
Catriona MacAulay, *University of Dundee, Scotland*, UK
Brinda Dalal, *Palo Alto Research Center*, USA

One of the central challenges of user experience has always been how early in the development cycle it gets to exert any degree of influence. The challenge that the field of user experience is facing today more pronounced than ever is how to influence the *decision makers* that give directions that guide individual product development. Vice versa, that early decision making process can benefit from user experience approaches that help it ground its direction in user research, and inform its decisions creatively through concepts and design thinking – see for example the concept of Business Design™ (as trade-marked, taught and practiced by the Rotman school of management, with similar approaches being the foundation of successes of e.g. consultancies like IDEO). The goal of the panel will be to draw together a community of experts and interested audience members in this topic and initiate a discourse on its key issues and opportunities.

■ PAPERS | BALLROOM C

CLASSIFYING AND RECOMMENDING CONTENT

SESSION CHAIR: Sean McNee, *Attenex Corporation*

PAPER | Input-Agreement: A New Mechanism for Collecting Data Using Human Computation Games

Edith Law, Luis von Ahn, *Carnegie Mellon University*, USA

Introduces a new general mechanism for human computation games called "Input-Agreement," along with an example game called TagATune that collects tags for arbitrary audio clips from players.

PAPER | Matchin: Eliciting User Preferences with an Online Game

Severin Hacker, Luis von Ahn, *Carnegie Mellon University*, USA

We give a new method to elicit user preferences that asks the users what a random person would prefer, and rewards them if their prediction is correct.

PAPER | Mixing It Up: Recommending Collections of Items

Derek L. Hansen, Jennifer Golbeck, *University of Maryland*, USA

We describe a design space for Collection Recommender Systems and report findings from a user study examining how people create mix-tapes, showing the importance of song order and co-occurrence.

■ **PAPERS/NOTES | ROOM 302**

HELPING OUT USERS WITH "EXTREME JOBS"

SESSION CHAIR: Leila Takayama, *Nokia Research Center*

PAPER | An Experimental Study of Field Dependency in Altered Gz Environments

Marc A. Le Pape, *University of Hawaii at Manoa*, USA
Ravi K. Vatrapu, *Copenhagen Business School*, Denmark

This experimental study showed that both altered Gz accelerations and perceptual style significantly impact human performance. Findings help predict human performance across individual differences in information processing in extreme environments.

PAPER | Taking the Time to Care: Empowering Low Health Literacy Hospital Patients with Virtual Nurse Agents

Timothy W. Bickmore, Laura M. Pfeifer, *Northeastern University*, USA
Brian W. Jack, *Boston University School of Medicine*, USA

Describes how an animated conversational agent can be used to explain written medical instructions to patients with low health literacy within a hospital environment.

NOTE | Evaluation of a Tool-Mounted Guidance Display for Computer-Assisted Surgery

Kevin Kassil, James Stewart, *Queen's University*, Canada

User study to determine whether a tool-mounted guidance display, which decreases stimulus-response incompatibility, outperforms the standard guidance display in computer-assisted surgery. Can improve patient outcomes in computer-assisted surgery.

NOTE | Towards Human-Centered Support for Indoor Navigation

Leonardo Ramirez, Sebastian Denef, Tobias Dyrks, *Fraunhofer Institute for Applied Information Technology FIT*, Germany

Proposes a focus change from a technology-oriented towards a practice-oriented approach for the question of indoor navigation support in Ubicomp, taking into account the specific sociotechnical character of navigation practices.

■ **PAPERS | ROOM 304**

VISUALIZATION 2

SESSION CHAIR: Pourang Irani, *University of Manitoba*

PAPER | EnsembleMatrix: Interactive Visualization to Support Machine Learning with Multiple Classifiers

Justin Talbot, *Stanford University*, USA
Bongshin Lee, Ashish Kapoor, Desney S. Tan, *Microsoft Research*, USA

Describes an interactive visualization system that allows users to browse and learn properties of classifiers by comparison and contrast and to easily create an ensemble classification model.

PAPER | FacetLens: Exposing Trends and Relationships to Support Sensemaking within Faceted Datasets

Bongshin Lee, Greg Smith, George G. Robertson, Mary Czerwinski, Desney S. Tan, *Microsoft Research*, USA

We explore the efficacy of interactive visualization systems in supporting exploration and sensemaking within faceted datasets. FacetLens exposes trends and relationships within faceted datasets, using linear facets and pivot operations.

PAPER | Sizing the Horizon: The Effects of Chart Size and Layering on the Graphical Perception of Time Series Visualizations

Jeffrey Heer, *Stanford University*, USA
Nicholas Kong, Maneesh Agrawala, *University of California, Berkeley*, USA

Contributes guidelines for space-efficient and perceptually-effective visualizations of time-series data, based on empirical evaluation of line and horizon graphs at varying chart sizes. The results can improve visualization software design.

■ **PAPERS/NOTES | ROOM 306**

USER STUDIES AND DESIGN

SESSION CHAIR: Clare-Marie Karat, *IBM TJ Watson Research Center*

PAPER | Call Browser: A System to Improve the Caller Experience by Analyzing Live Calls End-to-End

Bernhard Suhm, Pat Peterson, *BBN Technologies*, USA

Describes a web-based call analysis tools that empowers analysts and usability practitioners to optimize the caller experience by analyzing live calls end-to-end, pulling together information from typically disparate call segments.

NOTE | Finding Canonical Behaviors in User Protocols

Walter C. Mankowski, Peter Bogunovich, Ali Shokoufandeh, Dario D. Salvucci, *Drexel University*, USA

Describes an algorithm to find canonical behaviors: a small subset of behaviors that best represents the entire data set. Can assist researchers in analyzing and understanding large protocol data sets.

NOTE | Reduced Empathizing Skills Increase Challenges for User-Centered Design

William Hudson, *Syntagm Ltd*, UK

This paper provides a psychological basis for the difficulties that many technologists have in understanding the needs of users. It includes a large-scale study of workers in the IT industry.

TOCHI PAPER | Queuing Network Modeling of Transcription Typing

Changxu Wu, *University at Buffalo*, USA
Yili Liu, *University of Michigan*, USA

A queuing network theory based cognitive architecture and simulation software with an interactive interface for modeling and analyzing multitask human-computer interaction, with illustrative applications in transportation and multi-modal interfaces.

■ **PAPERS | ROOM 309**

COGNITIVE MODELING AND ASSESSMENT

SESSION CHAIR: Duncan Brumby, *University College London*

PAPER | An Intuitive Model of Perceptual Grouping for HCI Design

Ruth Rosenholtz, Nathaniel R. Twarog, Nadja Schinkel-Bielefeld, *Massachusetts Institute of Technology*, USA
Martin Wattenberg, *IBM T.J. Watson Research Center*, USA

Presents an intuitive computational model of human perceptual grouping, based on Gestalt principles. The model predicts percepts of information graphics. Aids designers in assessing the perceptual organization of software displays.

PAPER | Development of Decision Rationale in Complex Group Decision Making

Helena M. Mentis, Paula M. Bach, Blaine Hoffman, Mary Beth Rosson, John M. Carroll, *Pennsylvania State University*, USA

This study explores the characteristics of rationale development in a complex group decision making task. Results provide design implications for tools to better support rationale development in group decision making.

PAPER | Learning to Predict Information Needs: Context-Aware Display as a Cognitive Aid and an Assessment Tool

Bradley C. Love, *The University of Texas at Austin*, USA
Matt Jones, *University of Colorado at Boulder*, USA
Marc T. Tomlinson, Michael Howe, *The University of Texas at Austin*, USA

Presents a method for learning to predict (by non-obtrusive observation) a user's context-dependent information needs. User performance in a demanding video-game environment is boosted by the system.

■ **SPECIAL INTEREST GROUP | ROOM 310**

AGILE USER EXPERIENCE

ORGANIZERS:
Lynn Miller, *Autodesk, Inc.*, Canada
Desirée Sy, *Autodesk, Inc.*, Canada

■ **PAPERS | ROOM 311**

FINDING INFO ONLINE

SESSION CHAIR: Daniel Russell, *Google*

PAPER | backchan.nl: Integrating Backchannels in Physical Space

Drew Harry, Joshua Green, Judith Donath, *Massachusetts Institute of Technology*, USA

Describes and analyzes a design for augmenting Q&A sessions during presentations. The system lets the audience submit and vote on questions while seeing top questions projected in the presentation space.

PAPER | Learning How: The Search for Craft Knowledge on the Internet

Cristen Torrey, *Carnegie Mellon University*, USA
Elizabeth F. Churchill, *Yahoo! Research*, USA
David W. McDonald, *University of Washington*, USA

A qualitative study of online information-seeking practices of people working on craft and electronics projects. In this domain, search results are evaluated when the information is physically acted upon.

PAPER | Resonance on the Web: Web Dynamics and Revisitation Patterns

Eytan Adar, *University of Washington*, USA
Jaime Teevan, Susan T. Dumais, *Microsoft Research*, USA

We identify the relationship, or resonance, between revisitation behavior and changes in Web pages using behavioral information from 2.3M users and a fine-grained Web crawl.

■ **DESIGN COMMUNITY EVENT | ROOM 312**

SESSION CHAIR: Anijo Mathew, *Illinois Institute of Technology*

Design Panel Discussion with Malcolm McCullough

Malcolm McCullough is the author of Digital Ground - Architecture, Pervasive Computing and Environmental Knowing (2004), a seminal book in the field of interactive environments; Abstracting Craft (1996), hailed as an aesthetic computing classic; and Digital Design Media (1991/1994, with William Mitchell). He is an associate professor of architecture in the Taubman College of Architecture and Urban Planning at the University of Michigan – Ann Arbor.Malcolm McCullough has previously served on the design faculty at Carnegie Mellon University and Harvard University Graduate School of Design. He has lectured in many countries on urbanism and pervasive computing and is currently working on a new book, Ambient Commons, about environmental histories of locative media.

■ **PAPERS | BALLROOM A**

NEW MEDIA EXPERIENCES 2

SESSION CHAIR: Louise Barkhuus, *University of California, San Diego*

PAPER | Enhancing Remote Participation in Live Auctions: an 'Intelligent' Gavel

Christian Heath, Paul Luff, Dirk Vom Lehn, *King's College*, UK
Jun Yamashita, Hideaki Kuzuoka, *University of Tsukuba*, Japan

Describes a system that aims to support the integration of internet bidding into live auctions. This is founded on a detailed analysis of auctions and assessed through an experimental study.

PAPER | Revealing Gauguin: Engaging Visitors in Robot Guide's Explanation in an Art Museum

Keiichi Yamazaki, *Saitama University*, Japan
Akiko Yamazaki, *Tokyo University of Technology*, Japan
Mai Okada, Yoshinori Kuno, Yoshinori Kobayashi, Yosuke Hoshi, *Saitama University*, Japan
Karola Pitsch, *Bielefeld University*, Germany
Paul Luff, Dirk vom Lehn, Christian Heath, *King's College*, UK

Describes a robot explaining a Gauguin painting in a real museum environment. Shows the effectiveness of interrelating talk and non-verbal action such as head movements in human-robot interaction.

PAPER | Social Immersive Media: Pursuing Best Practices for Multi-user Interactive Camera/Projector Exhibits

Scott S. Snibbe, *Sona Research*, USA
Hayes S. Raffle, *Massachusetts Institute of Technology*, USA

Introduces "Social Immersive Media", interactive public installations that focus on both immersion--realized through full-body input via computer vision--and social interaction between participants. Describes best practices for immersive interface designers.

■ **PAPER + INVITED PANEL | BALLROOM B**

THE BEAUTY DILEMMA

SESSION CHAIR: Andrew Monk, *University of York*

PAPER | The "Beauty Dilemma": Beauty Is Valued but Discounted in Product Choice

Sarah Diefenbach, *University of Koblenz-Landau*, Germany
Marc Hassenzahl, *Folkwang University*, Germany/*Åbo Akademi University*, Finland

The paper explores the "beauty dilemma", the observation that people discount beauty in particular choice situations, although they value it in general, and the role of justification for his phenomenon.

PANELISTS:
Bill Buxton, *Microsoft Research*, USA
Mary Czerwinski, *Microsoft Research*, USA
Jodi Forlizzi, *Carnegie Mellon University*, USA

This panel is based around the paper 'The Beauty Dilemma: Beauty is valued but discounted' by Sarah Diefenbach and Marc Hassenzahl. This discussion expounds the provocative idea that people discount beauty in a choice situation, although they value it in general.

■ **PAPERS/NOTES | BALLROOM C**

POINTING AND CURSOR TECHNIQUES

SESSION CHAIR: Jacob Wobbrock, *University of Washington*

PAPER | DynaSpot: Speed-Dependent Area Cursor

Olivier Chapuis, *Université Paris-Sud & CNRS/INRIA*, France
Jean-Baptiste Labrune, *Massachusetts Institute of Technology*, USA
Emmanuel Pietriga, *INRIA / Université Paris-Sud / CNRS*, France

Presents and evaluates DynaSpot, a new pointing technique that couples the cursor's activation area with its speed, facilitating target acquisition and allowing selections in empty space without a mode switch.

PAPER | The Angle Mouse: Target-Agnostic Dynamic Gain Adjustment Based on Angular Deviation

Jacob O. Wobbrock, James Fogarty, Shih-Yen (Sean) Liu, Shunichi Kimuro, Susumu Harada, *University of Washington*, USA

Presents a novel target-agnostic pointing facilitation technique that dynamically adjusts C-D gain based on the spread of angles created during movement. Improves pointing throughput for motor-impaired users.

NOTE | Disambiguating Ninja Cursors with Eye Gaze

Kari-Jouko Räihä, Oleg Špakov, *University of Tampere*, Finland

Describes an implementation of multiple cursors, where the active cursor is chosen by eye gaze. Can reduce selection time when the target is far from the current cursor position.

NOTE | Rake Cursor: Improving Pointing Performance with Concurrent Input Channels

Renaud Blanch, Michael Ortega, *Université de Grenoble/CNRS*, France

Presents a pointing technique coupling two input channels, movement and gaze, that control a grid of cursor and which cursor is active; reduces drastically pointing time.

■ **PAPERS/NOTES | ROOM 302**

PERSONAL AND ONLINE INFORMATION

SESSION CHAIR: Steven Drucker, *Microsoft Live Labs*

PAPER | Contextual Web History: Using Visual and Contextual Cues to Improve Web Browser History

Sungjoon Steve Won, Jing Jin, Jason I. Hong, *Carnegie Mellon University*, USA

With formative user study, we present a history-tracking component whose goal is to improve the usability and utility of the history feature in web browsers.

PAPER | Critical Methods and User Generated Content: the iPhone on YouTube

Mark Blythe, Paul Cairns, *University of York*, UK

Sites like YouTube are data goldmines for HCI because users post immediate reactions to new technologies. Responses to iPhone 3G are analyzed using traditional HCI methods and also cultural theory.

NOTE | Note to Self: Examining Personal Information Keeping in a Lightweight Note-Taking Tool

Max G. Van Kleek, Michael Bernstein, Katrina Panovich, Gregory G. Vargas, David R. Karger, *Massachusetts Institute of Technology*, USA
mc schraefel, *University of Southampton*, UK

Our study examined how people write and use free-text notes to store and retrieve personal information, identifying needs for PIM tools to better support rapid, brief interactions and flexible representations.

NOTE | What's Mine is Mine: Territoriality in Collaborative Authoring

Jennifer Thom-Santelli, Dan R. Cosley, Geri Gay, *Cornell University*, USA

We examine the emergence of territorial behaviors within a collaborative authoring environment and propose that territoriality may, in certain circumstances, be beneficial to the cooperative process.

■ **PAPERS/NOTES | ROOM 304**

STUDYING WIKIPEDIA

SESSION CHAIR: Fernanda Viégas, *IBM Research*

PAPER | Coordinating Tasks on the Commons: Designing for Personal Goals, Expertise and Serendipity

Michel Krieger, Emily Margarete Stark, Scott R. Klemmer, *Stanford University*, USA

Describes the requirements analysis, design, and implementation of a collaborative task management system for social software Web sites. Lowers the threshold to participation in distributed projects such as Wikipedia.

PAPER | Coordination in Collective Intelligence: The Role of Team Structure and Task Interdependence

Aniket Kittur, Bryant Lee, Robert E. Kraut, *Carnegie Mellon University*, USA

Demonstrates how coordination dependencies predict whether collective intelligence tasks benefit from additional contributors or from concentrating the work. Suggests ways to optimally harness the wisdom of crowds.

NOTE | So You Know You're Getting the Best Possible Information: A Tool that Increases Wikipedia Credibility

Peter Pirolli, *Palo Alto Research Center*, USA
Evelin Wollny, *Knowledge Media Research Center*, Germany
Bongwon Suh, *Palo Alto Research Center*, USA

Experimental results show that credibility judgments about Wikipedia are affected by providing users with an interactive visualization (WikiDashboard) of article and author editing history.

NOTE | What's in Wikipedia? Mapping Topics and Conflict Using Socially Annotated Category Structure

Aniket Kittur, *Carnegie Mellon University*, USA
Ed H. Chi, Bongwon Suh, *Palo Alto Research Center*, USA

Demonstrates and empirically validates method for deriving topic distributions from socially annotated category structures. Provides the first quantitative mapping of topics in Wikipedia.

■ **PAPERS/NOTES | ROOM 306**

MULTIMODAL MOBILE INTERACTION

SESSION CHAIR: Jennifer Lai, *IBM Research*

PAPER | Auditory Icon and Earcon Mobile Service Notifications: Intuitiveness, Learnability, Memorability and Preference

Stavros Garzonis, Simon Jones, *University of Bath*, UK
Tim Jay, *University of Bristol*, UK
Eamonn O'Neill, *University of Bath*, UK

Longitudinal evaluation of auditory icons and earcons as mobile service notifications. Intuitiveness, learnability, memorability and user preference are compared and design guidelines suggested.

NOTE | Bezel Swipe: Conflict-Free Scrolling and Multiple Selection on Mobile Touch Screen Devices

Volker Roth, Thea Turner, *FX Palo Alto Laboratory, Inc.*, USA

Bezel Swipe is an interaction technique supporting multiple selection on touch display devices with zoomable user interfaces. It doesn't interfere with other gestures, such as swiping, pinching and tapping.

NOTE | Exploring the Potential of Audio-Tactile Messaging for Remote Interpersonal Communication

Lorna M. Brown, Abigail Sellen, *Microsoft Research Cambridge*, UK
Renan Krishna, *University of Sussex*, UK
Richard Harper, *Microsoft Research Cambridge*, UK

This paper presents a study of Shake2Talk- an audio-tactile messaging system - and reveals the types of messaging practices that occurred, and the values and meanings ascribed to these messages.

NOTE | Gravity Sphere: Gestural Audio-Tactile Interface for Mobile Music Exploration

Jaakko Keränen, Janne Bergman, Jarmo Kauko, *Nokia Research Center*, Finland

Describes a novel system for mobile music exploration that allows eyes-free usage through manipulation of the body of a device. Presents findings from formative usability evaluations.

NOTE | TouchBall: A Design and Evaluation of a Hand-held Trackball Based Touch-Haptic Interface

Minwoo Choi, Gerard Jounghyun Kim, *Korea University*, South Korea

Describes a novel and apparently compact mechanism for delivering force feedback (trackball), and two psychophysics studies aimed at profiling its display abilities in terms of human identification of force direction.

■ **SPECIAL INTEREST GROUP | ROOM 310**

DESIGNING USER INTERFACES FOR MULTI-TOUCH AND GESTURE DEVICES

ORGANIZERS:
Daniel Wigdor, *Microsoft Corporation*, USA
Joe Fletcher, *Microsoft Corporation*, USA
Gerald Morrison, *SMART Technologies*, Canada

■ PAPERS | ROOM 311

NEW GAMING EXPERIENCES

SESSION CHAIR: Regan Mandryk, *University of Saskatchewan*

PAPER | Design Influence on Social Play in Distributed Exertion Games

Florian 'Floyd' Mueller, Martin R. Gibbs, Frank Vetere, *The University of Melbourne*, Australia

Provides an analytical and descriptive account of "Table Tennis for Three", a networked physical game. Aids the design of future games that want to leverage exertion and social play.

PAPER | The Three-Sixty Illusion: Designing For Immersion in Pervasive Games

Annika Waern, *Interactive Institute*, Sweden
Markus Montola, *Nokia Research Center*, Finland
Jaakko Stenros, *University of Tampere*, Finland

The article discusses devices as tools to create an illusion of a game world staged in the physical world. The paper provides new insights into the design of pervasive games.

PAPER | Wii All Play: The Console Game as a Computational Meeting Place

Amy Voida, Saul Greenberg, *University of Calgary*, Canada

Presents results from a qualitative study of the console gaming practices of inter- and intra-generational groups of youth, adults, and elders. Can inform design for diverse populations of gamers.

■ INTERACTIVITY | ROOM 312

LOOK, HEAR, WEAR

SESSION CHAIR: Gonzalo Ramos, *Microsoft Live Labs*

An Education-Friendly Construction Platform for Wearable Computing

Grace Ngai, Stephen C.F. Chan, Joey C.Y. Cheung, Winnie W.Y. Lau, *Hong Kong Polytechnic University*, Hong Kong

Aurally and Visually Enhanced Audio Search with SoundTorch

Sebastian Heise, Michael Hlatky, Joern Loviscach, *Hochschule Bremen*, Germany

Low-Cost Gaze Pointing and EMG Clicking

Javier San Agustin, John Paulin Hansen, Dan Witzner Hansen, Henrik Skovsgaard, *University of Copenhagen*, Denmark

Natural Throw and Tilt Interaction between Mobile Phones and Distant Displays

Raimund Dachselt, Robert Buchholz, *University of Magdeburg*, Germany

Wearable EOG Goggles: Eye-Based Interaction in Everyday Environments

Andreas Bulling, Daniel Roggen, Gerhard Tröster, *ETH Zurich*, Switzerland

■ **PAPERS | BALLROOM A**

USABILITY METHODS

SESSION CHAIR: Mary Czerwinski, *Microsoft Research*

PAPER | Comparison of Three One-Question, Post-Task Usability Questionnaires

Jeff Sauro, *Oracle Corporation*, USA
Joseph S. Dumas, *User Experience Consultant*, USA

This analysis shows that a single question, the SMEQ or Likert, can quickly and reliably measure user satisfaction after a task in a usability test.

PAPER | Correlations among Prototypical Usability Metrics: Evidence for the Construct of Usability

Jeff Sauro, *Oracle Corporation*, USA
James R. Lewis, *IBM*, USA

Task-level prototypical usability metrics (time, completion rates, errors and post-task-sat) from 90 usability tests correlate (r between .44 and .60), lending support for combining measures into a single score.

PAPER | Let Your Users Do the Testing: A Comparison of Three Remote Asynchronous Usability Testing Methods

Anders Bruun, *Mjølner Informatics A/S*, Denmark
Peter Gull, *Jyske Bank A/S*, Denmark
Lene Hofmeister, *Nykredit A/S*, Denmark
Jan Stage, *Aalborg University*, Denmark

Empirical study comparing three asynchronous methods for remote usability testing. The asynchronous methods identify significantly fewer usability problems than classical lab testing, but with considerably less evaluator effort.

■ **PANELS | BALLROOM B**

INTERACTING WITH HEALTH

PANELISTS:
mc schraefel, *University of Southampton*, UK
Paul André, *University of Southampton*, UK
Ryen White, *Microsoft Research*, USA
Desney S. Tan, *Microsoft Research*, USA
Tim Berners-Lee, *Massachusetts Institute of Technology*, USA
Sunny Consolvo, *Intel Research*, USA
Robert Jacobs, *Tufts University*, USA
Christopher Le Dantec, *Georgia Institute of Technology*, USA
Gary Marsden, *University of Cape Town*, South Africa
Ben Shneiderman, *University of Maryland*, USA
Daniel Weitzner, *Massachusetts Institute of Technology*, USA
Isaac Kohane, *Harvard University*, USA
Lena Mamykina, *Georgia Institute of Technology*, USA
Peter Szolovits, *Massachusetts Institute of Technology*, USA

While health records are increasingly stored electronically, we have little access to this data about ourselves. We're not used to thinking of these official records either as ours or as something we'd understand if we had access to them in any case. We increasingly turn to the Web, however, to query any ache, pain or health goal we may have before consulting with health care professionals. Likewise, for proactive health care, such as nutrition or fitness, or post diagnosis support, to find fellow-sufferers, we turn to online resources. There is, it seems, a potential disconnect between points at which professional and proactive health care intersect. Such gaps in information sharing may have direct impact on practices we decide to take up, the care we seek, and the support professionals offer. In this panel, we consider several places within proactive, preventative health care in particular HCI has a role towards enhancing health knowledge discovery and health support interaction. Our goal is to demonstrate how now is the time for eHealth to come to the forefront of the HCI research agenda, and to look towards establishing grand challenges for HCI in eHealth.

■ **PAPERS | BALLROOM C**

SOFTWARE DEVELOPMENT

SESSION CHAIR: Gina Venolia, *Microsoft Research*

PAPER | Finding Causes of Program Output with the Java Whyline

Andrew J. Ko, *University of Washington*, USA
Brad A. Myers, *Carnegie Mellon University*, USA

Design and evaluation of a debugging tool that supports "why" and "why not" questions about the program output of complex Java programs. Can significantly increase debugging success and efficiency.

PAPER | Fisheyes in the Field: Using Method Triangulation to Study the Adoption and Use of a Source Code Visualization

Mikkel R. Jakobsen, Kasper Hornbæk, *University of Copenhagen*, Denmark

This paper contributes insight into professional programmers' adoption and use of a fisheye interface in real-life work. We discuss field study findings and benefits of combining multiple data collection methods.

PAPER | Two Studies of Opportunistic Programming: Interleaving Web Foraging, Learning, and Writing Code

Joel Brandt, *Stanford University/Adobe Systems, Inc.*, USA
Philip J. Guo, Joel Lewenstein, *Stanford University*, USA
Mira Dontcheva, *Adobe Systems*, Inc., USA
Scott R. Klemmer, *Stanford University*, USA

This paper contributes the first strong empirical evidence of how programmers use Web resources in practice. We employed a mixed-methods approach, conducting a laboratory study and a large-scale log analysis.

■ PAPERS/NOTES | ROOM 302

STUDYING CELL PHONE USE

SESSION CHAIR: Amy Voida, *University of Calgary*

PAPER | Focus on Driving: How Cognitive Constraints Shape the Adaptation of Strategy when Dialing while Driving

Duncan P. Brumby, *University College London*, UK
Dario D. Salvucci, *Drexel University*, USA
Andrew Howes, *University of Manchester*, UK

Investigates how people adapt their multitasking strategies to varying performance objectives. Augments our understanding of how cognitive constraints limit dual-task strategy adaptations in complex dynamic environments.

NOTE | At Home and with Computer Access: Why and Where People Use Cell Phones to Access the Internet

Stina Nylander, *Swedish Institute of Computer Science*, Sweden
Terés Lundquist, *Luleå University of Technology*, Sweden
Andreas Brännström, *Umeå University*, Sweden

Our participants frequently accessed the internet from cell phones. They often chose the phone when they had access to a computer and often used the phone for Internet at home.

NOTE | Bringing Design Considerations to the Mobile Phone and Driving Debate

Leila Takayama, *Stanford University*, USA
Jo Ann G. Sison, Brian Lathrop, *Electronics Research Lab, Volkswagen*, USA
Nicholas Wolfe, Abe Chiang, Alexia Nielsen, Clifford Nass, *Stanford University*, USA

This paper addresses design considerations for in-vehicle cell phone conversations through hands-free phone systems. This study discusses implications of systems that vary speaker placement and voice feedback (side tone) levels.

NOTE | Can I Borrow Your Phone? Understanding Concerns When Sharing Mobile Phones

Amy K. Karlson, A.J. Bernheim Brush, Stuart Schechter, *Microsoft Research*, USA

Offers evidence of data and relationship sensitivities when people share mobile phones with others. Motivates the development of new security models that support flexible data restrictions for guest phone users.

NOTE | Social Responses in Mobile Messaging: Influence Strategies, Self-Disclosure, and Source Orientation

Dean Eckles, *Stanford University/Nokia Research Center*, USA
Doug Wightman, *Queen's University*, Canada
Claire Carlson, Attapol Thamrongrattanarit,
Marcello Bastea-Forte, B.J. Fogg, *Stanford University*, USA

Field experiment comparing senders (human vs. computer) and influence strategies for increasing self-disclosure in via mobile messaging. The results are inconsistent with versions of social responses to communication technologies theory.

■ PAPERS/NOTES | ROOM 304

DESKTOP TECHNIQUES

SESSION CHAIR: Amy Karlson, *Microsoft Research*

PAPER | Ephemeral Adaptation: The Use of Gradual Onset to Improve Menu Selection Performance

Leah Findlater, Karyn Moffatt, Joanna McGrenere, Jessica Dawson, *University of British Columbia*, Canada

Ephemeral adaptation is a new adaptive GUI technique that uses a temporal dimension to reduce visual search time. Results show performance improvements over both a control condition and colour highlighting.

PAPER | Revisiting Read Wear: Analysis, Design, and Evaluation of a Footprints Scrollbar

Jason Alexander, Andy Cockburn, Stephen Fitchett, *University of Canterbury*, New Zealand
Carl Gutwin, *University of Saskatchewan*, Canada
Saul Greenberg, *University of Calgary*, Canada

Analyses within-document revisitation from a longitudinal study, presents two experiments with a simple 'marking' scrollbar, describes the design and two evaluations of the Footprints Scrollbar that aids within-document revisitation.

NOTE | Power Tools for Copying and Moving: Useful Stuff for your Desktop

Guillaume Faure, Olivier Chapuis, Nicolas Roussel, *Université Paris-Sud / CNRS*, France

We present new techniques for copying and moving things on a desktop that enhance and smoothly integrate with existing ones.

NOTE | WikiFolders: Augmenting the Display of Folders to Better Convey the Meaning of Files

Stephen Voida, Saul Greenberg, *University of Calgary*, Canada

We present WikiFolders, a system combining aspects of direct-manipulation file browsers and wikis to allow rich-text folder and file annotations. Suggests a novel paradigm for annotating and organizing digital artifacts.

■ **PAPERS | ROOM 306**

DESIGNING FOR SENIOR CITIZENS

SESSION CHAIR: Jodi Forlizzi, *Carnegie Mellon University*

PAPER | Adaptive Information Search: Age-Dependent Interactions between Cognitive Profiles and Strategies

Jessie Chin, Wai-Tat Fu, Thomas G. Kannampallil, *University of Illinois at Urbana-Champaign*, USA

An empirical study found older adults performed quantitatively better in ill-defined web search tasks than younger adults. The discussion of search strategy selection also brings design guidelines for elderly users.

PAPER | Desiring to be in Touch in a Changing Communications Landscape: Attitudes of Older Adults

Siân E. Lindley, Richard Harper, Abigail Sellen, *Microsoft Research Cambridge*, UK

Reports findings from focus groups with older adults, in which their attitudes to keeping in touch were explored. Design implications are drawn and illustrative concepts presented.

PAPER | Knocking on Elders' Door: Investigating the Functional and Emotional Geography of their Domestic Space

Chiara Leonardi, Claudio Mennecozzi, Elena Not, Fabio Pianesi, Massimo Zancanaro, *FBK-irst,* Italy
Francesca Gennai, Antonio Cristoforetti, *Istituto Regionale di Studi e Ricerca Sociale,* Italy

A study based on cultural probes conducted in northern Italy investigates the structure of the geography of emotions in older people's homes in terms of objects, places and domestic activities.

■ **SPECIAL INTEREST GROUP | ROOM 310**

DESIGN AND ADOPTION OF SOCIAL COLLABORATION WITHIN BUSINESSES

ORGANIZERS:
Jason Blackwell, *IBM*, USA
John Sheridan, *Social Media 404 Inc.*, Canada
Keith Instone, *IBM*, USA
David R. Schwartz, *IBM*, USA
Sandra Kogan, *IBM*, USA

■ **PAPERS/NOTES | ROOM 311**

PHOTOS AND LIFE LOGGING

SESSION CHAIR: Carman Neustaedter, *Kodak Research Labs*

PAPER | Baby Steps: Evaluation of a System to Support Record-Keeping for Parents of Young Children

Julie A. Kientz, *University of Washington*, USA
Rosa I. Arriaga, Gregory D. Abowd, *Georgia Institute of Technology*, USA

Presents deployment study findings of a new system called Baby Steps aimed at supporting record-keeping for parents with young children. Provides guidelines and future research areas for this domain.

PAPER | Making History: Intentional Capture of Future Memories

Daniela Petrelli, *University of Sheffield*, UK
Elise van den Hoven, *Eindhoven University of Technology*, The Netherlands
Steve Whittaker, *University of Sheffield*, UK

What would you like your grandchildren to know about you today? Ten family-made time capsules were analyzed, focusing on autobiographical memory. This resulted in design suggestions for life logging technologies.

NOTE | Getting Sidetracked: Display Design and Occasioning Photo-Talk with the Photohelix

Otmar Hilliges, *University of Munich*, Germany
David S. Kirk, *Microsoft Research Cambridge*, UK

Presents an under-reported behavior in photo-talk, the process of getting sidetracked. Uses vignettes to illustrate this behavior. Bears implications when designing photo sharing applications and understanding users engaging in photo-talk.

NOTE | Reflections of Everyday Activities in Spending Data

Julia Schwarz, *University of Washington*, USA
Jennifer Mankoff, H. Scott Matthews, *Carnegie Mellon University*, USA

Describes a new method for sensing human activity using spending data. Presents sample applications and discusses the possibilities and limitations of this technique.

■ CASE STUDIES | ROOM 312

TOOLS FOR UX RESEARCHERS

SESSION CHAIR: Susan Dray, *Dray & Associates, Inc*

An Online Forum as a User Diary for Remote Workplace Evaluation of a Work-Integrated Learning System

Valentina Lichtner, Angela P. Kounkou, Amir Dotan, *City University*, UK
José P. Kooken, *University of Twente*, The Netherlands
Neil A.M. Maiden, *City University*, UK

Designing and Deploying UseTube, Google's Global User Experience Observation and Recording System.

Mark LaRosa, *MaxiScale, Inc.*, USA
David Poole, *Google, Inc.*, USA
Rudy Schusteritsch, *That Awesome Company Inc.*, USA

Supporting the Design of Network-Spanning Applications

Stefan Rennick Egglestone, *University of Nottingham*, UK
Andy Boucher, *Goldsmiths College, University of London*, UK
Tom Rodden, *University of Nottingham*, UK
Andy Law, *Edinburgh College of Art*, UK
Jan Humble, UK
Chris Greenhalgh, *University of Nottingham*, UK

■ PAPERS/NOTES | BALLROOM A

SOCIAL SEARCH AND SENSEMAKING

SESSION CHAIR: Gene Golovchinsky, *FXPAL*

PAPER | CoSense: Enhancing Sensemaking for Collaborative Web Search

Sharoda A. Paul, *Pennsylvania State University*, USA
Meredith Ringel Morris, *Microsoft Research*, USA

Presents design challenges, research methods and trial findings in creating and evaluating the rural Indian Storybank system. Shows the value of such a system in communicating development and community information.

PAPER | PlayByPlay: Collaborative Web Browsing for Desktop and Mobile Devices

Heather Wiltse, *Indiana University*, USA
Jeffrey Nichols, *IBM Almaden Research Center*, USA

PlayByPlay is a collaborative web tool that uses instant messaging to support a variety of browsing tasks and interaction styles, from asynchronous to synchronous, on both desktop and mobile devices.

NOTE | Annotate Once, Appear Anywhere: Collective Foraging for Snippets of Interest Using Paragraph Fingerprinting

Lichan Hong, Ed H. Chi, *Palo Alto Research Center*, USA

We use paragraph fingerprinting to make annotations travel across pages and across users. Our technique eliminates the cost of re-producing the annotations, and encourages social sharing of information nuggets.

NOTE | With a Little Help from My Friends: Examining the Impact of Social Annotations in Sensemaking Tasks

Les Nelson, *Palo Alto Research Center*, USA
Christoph Held, *Knowledge Media Research Center*, Germany
Peter Pirolli, Lichan Hong, Diane Schiano, Ed H. Chi, *Palo Alto Research Center*, USA

Describes user study of social annotation tool showing greater learning performance of participants using annotations from knowledgeable users. Help designers think about learning scaffolds in social tagging /annotations tools.

■ DESIGN COMMUNITY EVENTS | BALLROOM B

DESIGNING FOR DISCOVERY

SESSION CHAIR: Mark Baskinger, *Carnegie Mellon University*

DESIGN PRACTICE | Safety, Speed, and Style: Interaction Design of an In-Vehicle Interface

Larry Constantine, *University of Madeira*, Portugal
Helmut Windl, *Continental Automotive GmbH*, Germany

DESIGN METHODS | Design an Interactive Visualization System for Core Drilling Expeditions Using Immersive Empathic Method

Yu-Chung Chen, Sangyoon Lee, HyeJung Hur, JasonLeigh, Andrew Johnson, Luc Renambot, University of *Illinois at Chicago*, USA

DESIGN PRACTICE | Simplified User Interfaces for Design and User Testing of Architecture Software Applications

Greg Demchak, Matthew Jezyk, Lira Nikolovska, *Autodesk*, Canada

DESIGN PRACTICE | Understanding User Needs for Conceptual Design Phases of Architecture Projects

Lira Nikolovska, Greg Demchak, Matthew Jezyk, *Autodesk*, Canada

DESIGN PRACTICE | When One-Arm Bandits Go Digital: Designing a Casino Back-end System

Celine Pering, Sheila Vyas, *frog design, Inc.*, USA

■ PAPERS | BALLROOM C

MOBILE APPLICATIONS FOR THE DEVELOPING WORLD

SESSION CHAIR: Ed Cutrell, *Microsoft Research*

PAPER | A Comparison of Mobile Money-Transfer UIs for Non-Literate and Semi-Literate Users

Indrani Medhi, Gautama S. N. Nagasena, Kentaro Toyama, *Microsoft Research India*, India

Ethnographic and usability study exploring mobile money-transfer UIs for non-literate and semi-literate users. Can inform designers interested in UI design issues of the developing world.

PAPER | Comparing Semiliterate and Illiterate Users' Ability to Transition from Audio+Text to Text-Only Interaction

Leah Findlater, *University of British Columbia*, Canada
Ravin Balakrishnan, *University of Toronto*, Canada
Kentaro Toyama, *Microsoft Research India*, India

Through two studies we show that semiliterate users benefit from audio-augmented text interaction compared to illiterate users. These benefits include reduced reliance on audio support and improved visual word recognition.

PAPER | StoryBank: Mobile Digital Storytelling in a Development Context

David M. Frohlich, Dorothy Rachovides, Kiriaki Riga, *University of Surrey*, UK
Ramnath Bhat, Maxine Frank, *VOICES*, India
Eran Edirisinghe, Dhammike Wickramanayaka, *Loughborough University*, UK
Matt Jones, Will Harwood, *Swansea University*, UK

Presents design challenges, research methods and trial findings in creating and evaluating the rural Indian Storybank system. Shows the value of such a system in communicating development and community information.

■ PAPERS | ROOM 302

UNDERSTANDING UI 2

SESSION CHAIR: Jonathan Arnowitz, *Google*

PAPER | Self-Interruption on the Computer: A Typology of Discretionary Task Interleaving

Jing Jin, Laura Dabbish, *Carnegie Mellon University*, USA

We describe a qualitative study of self-interruption on the computer. Using a grounded theory approach, we identify seven categories of self-interruptions and consider the consequences and **Benefits:** associated with each.

PAPER | The Problem of Consistency in the Design of Fitts' Law Experiments: Consider either Target Distance and Width or Movement Form and Scale

Yves Guiard, *CNRS & TELECOM ParisTech*, France

This theoretical paper discusses the usual way of designing pointing experiments and recommends an alternative design that delivers more reliable estimates of Fitts' law parameters while simplifying the experimental work.

PAPER | Toward a Unified Theory of the Multitasking Continuum: From Concurrent Performance to Task Switching, Interruption, and Resumption

Dario D. Salvucci, *Drexel University*, USA
Niels A. Taatgen, *Carnegie Mellon University*, USA/*University of Groningen*, The Netherlands
Jelmer P. Borst, *University of Groningen*, The Netherlands

Describes a unifying theory of dual-task performance and task interruption. Augments our understanding of how users switch tasks in multitask environments.

■ PAPERS | ROOM 304

SUPPORTING BLIND USERS

SESSION CHAIR: Shari Trewin, *IBM Research*

PAPER | Evaluating Existing Audio CAPTCHAs and an Interface Optimized for Non-Visual Use

Jeffrey P. Bigham, Anna C. Cavender, *University of Washington*, USA

Demonstrates the difficulty users have with existing audio CAPTCHAs and presents an interface that improves performance by more than 50%, illustrating broadly applicable design principles for non-visual interfaces.

PAPER | On the Audio Representation of Distance for Blind Users

Martin Talbot, William Cowan, *University of Waterloo*, Canada

This paper compares three methods of encoding distance as sound: pitch, tempo and ecological. The results include useful rules of thumb for providing navigation assistance to blind persons.

TOCHI PAPER | Data Sonification for Visually Impaired Users

Haixia Zhao, Catherine Plaisant, Ben Shneiderman, Jonathan Lazar, *University of Maryland*, USA

iSonic's unique by generalizable design enabled 7 blind users to explore georeferenced data using coordinated maps and tables with user-controlled interactions that generate nontextual sounds and speech output.

■ **PAPERS | ROOM 306**

ADVANCED WEB SCENARIOS

SESSION CHAIR: Eytan Adar, *University of Washington*

PAPER | Amplifying Community Content Creation with Mixed Initiative Information Extraction

Raphael Hoffmann, Saleema Amershi, Kayur Patel, Fei Wu, James Fogarty, Daniel S. Weld, *University of Washington*, USA

Presents a synergistic pairing of community content creation with learning-based information extraction, demonstrating their simultaneous acceleration by studying over 2400 visitors contributing to Wikipedia articles as a non-primary task.

PAPER | Attaching UI Enhancements to Websites with End Users

Michael Toomim, *University of Washington*, USA
Steven M. Drucker, *Microsoft Live Labs*, USA
Mira Dontcheva, *Adobe Systems*, Inc., USA
Ali Rahimi, *Intel Research*, USA
Blake Thomson, James A. Landay, *University of Washington*, USA

Tool for cross-site mashups and browser extensions. Allows end user to attach mashup to new site by example, by training a web data extractor in a few clicks.

PAPER | User-created Forms as an Effective Method of Human-agent Communication

John Zimmerman, Kathryn Rivard, Ian Hargraves, Anthony Tomasic, Ken Mohnkern, *Carnegie Mellon University*, USA

Describes the design and evaluation of a mixed-initiative interface where users create a form as a shared problem representation between humans and agents, allowing agents to automate information-retrieval tasks.

■ **USER EXPERIENCE COMMUNITY FORUM | ROOM 310**

SESSION CHAIR: Elizabeth Buie, *Luminanze Consulting*, LLC

■ **PAPERS/NOTES | ROOM 311**

ENHANCING REALITY

SESSION CHAIR: Steven Feiner, *Columbia University*

PAPER | Designable Visual Markers

Enrico Costanza, Jeffrey Huang, *EPFL Media and Design Lab*, Switzerland

d-touch is a recognition system supporting designable visual markers which are both machine-readable and visually expressive to humans. It runs in real-time on mobile phones and PCs.

PAPER | Like Bees Around the Hive: A Comparative Study of a Mobile Augmented Reality Map

Ann Morrison, Antti Oulasvirta, Peter Peltonen, *Helsinki Institute for Information Technology HIIT*, Finland
Saija Lemmela, *Nokia Research Center,* Finland
Giulio Jacucci, *Helsinki Institute for Information Technology HIIT*, Finland
Gerhard Reitmayr, *University of Cambridge*, UK
Jaana Näsänen, *Helsinki Institute for Information Technology HITT*, Finland
Antti Juustila, *University of Oulu*, Finland

Presents findings from field trials of mobile augmented reality map, compared to a 2D digital map. We discuss the role of physical augmentation in supporting place-making practices.

NOTE | Going My Way: A User-aware Route Planner

Jaewoo Chung, Chris Schmandt, *Massachusetts Institute of Technology*, USA

We present a novel mobile user-aware route planner that provides directions from automatically selected sets of landmarks that are close to the destination, informed by the user's usual travel patterns.

NOTE | Inferring Player Engagement in a Pervasive Experience

Joel E. Fischer, Steve Benford, *University of Nottingham*, UK

We introduce a model to predict player engagement in pervasive experiences based on measuring elapsed time and response time between their interactions, and validate this through an empirical study.

■ **alt.chi | ROOM 312**

BUILD A BETTER WORLD

SESSION CHAIR: Azam Khan, *Autodesk Research*

Give Peace a Chance: A Call to Design Technologies for Peace

Juan Pablo Hourcade, *University of Iowa*, USA

Human Computer Biosphere Interaction: Towards Sustainable Society

Hiroki Kobayashi, Ryoko Ueoka, Michitaka Hirose, *University of Tokyo*, Japan

SenseableRays: Opto-Haptic Substitution for Touch-Enhanced Interactive Spaces

Jun Rekimoto, *The University of Tokyo*, Japan

Species-Appropriate Computer Mediated Interaction

Robert E. McGrath, *University of Illinois at Urbana-Champaign*, USA

Three Environmental Discourses in Human-Computer Interaction

Elizabeth Goodman, *University of California*, USA

COURSE 18 | ROOM 206

DEVELOPING VISUAL MODELS THAT CAN LEAD TO DESIGN IMPLICATIONS

09:00 - 18:00

INSTRUCTORS:
Shelley Evenson, *Carnegie Mellon University*, USA
Hugh Dubberly, *Dubberly Design Office*, USA
Rick Robinson, *CONTINUUM*, USA

Benefits: The challenge in human-centered design is not in conducting appropriate research, but in making the leap from research findings to design implications. Creating a model is often an important step toward creating consensus or a driving concept when working with multidisciplinary development teams. We will focus on one of the most challenging aspects of the design process. This course is about the collaborative processes and engaging tools you can use to be a better visual communicator when making the leap from research to concept. We will quickly develop a hunt statement*, conduct discovery stage immersive research and use our findings to develop conceptual models and design implications.

Audience: Participants need no prerequisite knowledge of the subject. This course is for both novice and seasoned professionals, introducing both basic themes and new approaches to modeling. We suggest this course for:

- Individuals who conduct research and synthesize data as part of their working process
- Managers involved in reviewing research results
- Designers and HCIers

COURSE 15 | ROOM 207

BEYOND ANECDOTES: ANALYZING QUALITATIVE DATA FROM FIELD STUDIES

09:00 - 18:00

INSTRUCTOR:
David A. Siegel, *Dray & Associates, Inc.*, USA

Benefits: Field studies are essential to user-centered design, but the data from these studies can be overwhelming and ambiguous. As a result, conclusions are all too often impressionistic or anecdotal, with vague or even misleading implications for design. This course will teach you techniques for analysis to improve the credibility and validity of your findings, to keep them focused on design, and to help you avoid drowning in your data. The course is an excellent follow-up to Susan Dray and David Siegel's course "Understanding Users in Context: Fieldwork in User-Centered Design," also being offered at CHI 2009.

Audience: This tutorial is intended for practitioners who want to improve the validity and credibility of their field user research. Ideally, participants will have some experience in doing field research of any type with a practical focus on any aspect of product definition and design. It will also be useful for people who have a background in more structured forms of research, such as lab usability, who want to prepare for the less structured world of field research. For those with less field research experience, our course, "Understanding Users in Context: Fieldwork in User Centered Design," is excellent preparation.

COURSE 16 | ROOM 208

3D USER INTERFACES: DESIGN, IMPLEMENTATION, USABILITY

09:00 - 18:00

INSTRUCTORS:
Joseph J. LaViola Jr., *University of Central Florida*, USA
Ernst Kruijff, *Graz University of Technology*, Austria
Doug Bowman, *Virginia Tech*, USA
Ivan Poupyrev, *Sony Computer Science Laboratories, Inc.*, Japan
Wolfgang Struerzlinger, *York University*, Canada

Benefits: Over the last decade, the field of 3D user interfaces has grown out of its infancy, forming the basis for many game and industry applications. In this course, you will gain a solid background on the theory and the methods to create your own 3D spatial interfaces. Focusing particularly on real-world applications, we identify the particular difficulties of designing and developing spatial interfaces, carefully embedding the latest evaluation results. In addition, the course will address novel research themes such as 3D interaction for large displays and games; and integrating 3DUIs with mobile devices, robotics, and the environment.

Audience: The intended audience is anyone interested in learning about 3D UIs for both research and real-world applications. Selected course blocks will also be interesting for those who deal with interface, design, and human factors issues related to 3D video games, mobile computing, animation and modeling, and the arts. A basic background in HCI is preferred.

COURSE 17 | ROOM 210

MOBILE INTERACTION DESIGN

09:00 - 13:00

INSTRUCTORS:
Matt Jones, *Swansea University / UNK Wales*, UK
Gary Marsden, *UCT*, South Africa

Audience: and **Benefits:**

- For developers and designers: the course will give challenging, fresh perspectives on the goals of and approaches to mobile interaction design.
- For industrial and academic researchers: the course will provide provoking questions about the form and function of effective mobile user experiences.
- For students: people engaged in graduate studies in the mobile area will benefit from seeing the "bigger picture". The design methods and perspectives presented will provide useful tools for anyone involved in developing concept and prototype systems.
- For mobile business and marketing analysts and strategists: the course will offer an interesting analysis to help explain previous hits and flops as well as pointing the way for successful future innovation.

COURSE 19 | ROOM 210

TIPS AND TECHNIQUES FOR MEASURING THE USER EXPERIENCE

14:30 - 16:00

INSTRUCTORS:
Thomas S. Tullis, *Fidelity Investments* and *Bentley College*, USA
William Albert, *Fidelity Investments*, USA

Benefits: This course is designed for anyone who wants to learn more about measuring the user experience. Many aspects of the user experience can be quantified, including task completion rates, task times, and various types of subjective ratings. This course will highlight ten of the most useful tips or techniques for measuring the user experience that we've learned from conducting hundreds of usability studies. These are practical techniques that can be immediately applied. Real examples are given, including how to do the analyses using Excel.

Audience: Usability and user experience practitioners who want to take a more quantitative approach to understanding the user experience. Prior experience with statistical analyses is not required, but basic familiarity with usability evaluations is helpful.

COURSE 20 | ROOM 210

WORKING WITH AN AGILE TEAM: THE USER FEEDBACK TWO-STEP

16:30 - 18:00

INSTRUCTOR:
Hugh R. Beyer, *InContext Enterprises, Inc.*, USA

Benefits: Attendees will gain the following skills and knowledge

- An understanding of the basics of the Agile approach to software development, and how that affects the UX participants;
- An understanding of how to leverage the rules and principles of Agile development to reinforce the UX position on the team;
- Knowledge of some common ways that the relationship between development and UX is disrupted when a project adopts Agile development, and strategies for recovering;
- Knowledge of how to handle the detailed interactions with a team: how to pass development new UI designs, the results of user research and usability tests, modifications to designs as a result of user testing and QA in the context of an Agile project;
- Internalize how the interaction with development works in practice through an interactive game simulating the key elements of an Agile project.

Audience: UX professionals who are working with (or will work with) Agile development teams.

Notes

Thursday

= 15 minutes = 30 minutes = unscheduled time

	8:15–9:00	9:00–10:30	11:30–13:00	14:30–16:00	16:30–18:00
Ballroom A		Papers Technology for Museums Page 82	Papers/Notes Tabletops and Single Display Groupware Page 86		Closing Plenary **Kees (C.J.) Overbeeke** Dreaming of the Impossible Page 92
Ballroom B	CHI MADNESS Page 82	Panels Eek! A Mouse! Page 82	Design Community Events Designing for Collaboration Page 86		
Ballroom C		Papers New Mobile Interactions Page 82	Papers Studying Intelligent Systems Page 86		
Room 302		Papers Security and Privacy Page 83	Papers/Notes Systems for Children Page 87	Papers Gesture UIs Page 90	
Room 304		Papers/Notes Web Searching and Browsing Page 83	Papers/Notes New Input Modalities Page 87	Papers Understanding Graphs Page 90	
Room 306		Papers Hospitals Page 84	Papers Reflecting on Design Page 88	Papers/Notes Computer Mediated Communication 2 Page 90	
Room 309		Student Research Competition Page 84	Student Design Competition Page 88		
Room 310		SIG User Experience Evaluation – Do You Know Which Method to Use? Page 84	SIG Research Ethics in the Facebook Era: privacy, anonymity and the IRB Page 88	SIG API Usability Page 91	
Room 311		Papers/Notes Social Software in Office Page 84	Papers/Notes Tactile UI Page 89	Papers Informed Design Page 91	
Room 312		Case Studies New Technologies and Interactions Page 85	Case Studies Experience With Software and System Development and Evaluation Page 89	alt.chi Method in the Madness Page 91	
Room 206		Course 24 Ajax - Design and Usability Page 93		Course 28 Designing a Task-Focused Conceptual Model Page 93	
Room 207		Course 21 New Paradigms for Adaptive Interaction Page 93			
Room 208					
Room 210		Course 23 Leading Innovation Workshops: Aligning Cross-Functional Teams around Breakthrough Ideas Page 93		Course 27 Designing for the Scent of Information: Advanced Concepts Page 94	

Commons/Hall D	Special Events
Exhibits, Interactivity, & Info Booth 10:30–14:30	Spotlight on Student Design and Research Competitions, Doctoral Consortium, and Workshops Posters 10:30–11:30 Hall C

■ CHI MADNESS | BALLROOM B

8:15-9:00

SESSION CHAIRS:
Jeffrey Nichols, *IBM Research*
Mira Dontcheva, *Adobe Advanced Technology Labs*

CHI Madness, now in its fourth year, returns to give everyone a lightning speed overview of the day's program.

■ PAPERS | BALLROOM A

TECHNOLOGY FOR MUSEUMS

SESSION CHAIR: Eva Hornecker, *University of Strathclyde*

PAPER | A Tag in the Hand: Supporting Semantic, Social, and Spatial Navigation in Museums

Dan R. Cosley, Jonathan Baxter, Soyoung Lee, Brian Alson, Saeko Nomura, Phil Adams, Chethan Sarabu, Geri Gay, *Cornell University*, USA

Deploys a well-liked handheld tagging system for museum exhibits. Reveals social aspects of tagging, people's strategies for navigating device and physical spaces, and general design guidelines for mobile, social systems.

PAPER | Familial Collaborations in a Museum

Tom Hope, Yoshiyuki Nakamura, *National Institute of Advanced Industrial Science and Technology*, Japan
Toru Takahashi, *ATR Cognitive Information Science Laboratories*, Japan
Atsushi Nobayashi, Shota Fukuoka, *National Museum of Ethnology*, Japan
Masahiro Hamasaki, Takuichi Nishimura, *National Institute of Advanced Industrial Science and Technology*, Japan

Case study of Japanese families using a portable museum information and game interface. Can assist practitioners in understanding how design decisions may affect collaborative interaction in family groups.

PAPER | Supporting the Creation of Hybrid Museum Experiences

Boriana Koleva, Stefan Rennick Egglestone, Holger Schnädelbach, Kevin Glover, Chris Greenhalgh, Tom Rodden, *University of Nottingham*, UK
Martyn Dade-Robertson, *Newcastle University*, UK

The iterative development of a tool for prototyping hybrid museum experiences by domain professionals highlights the advantages of adopting an experience oriented rather than software development perspective.

■ PANELS | BALLROOM B

EEK! A MOUSE!

PANELISTS:
Roel Vertegaal, *Queen's University*, Canada
Ivan Poupyrev, *Sony Computer Science Laboratories, Inc.*, Japan
Nimish Biloria, *TU Delft*, The Netherlands
Seth Goldstein, *Carnegie Mellon University*, USA
Hiroshi Ishii, *Massachusetts Institute of Technology*, USA
Sachiko Kodama, *University of Electro-Communications*, Japan
Pattie Maes, *Massachusetts Institute of Technology*, USA
Jun Rekimoto, *Sony Computer Science Laboratories*, Inc., Japan

In this panel, we explore the role emerging transitive materials, like flexible thin-film displays, multi-touch input skins, e-textiles, micro-actuators and Claytronics might play in re-defining the human interface towards a programmable form of reality. Panelist will extrapolate historical trends from Tangibles to new developments in organic user interfaces, trying to identify a future in which interfaces will no longer be predominantly flat, but instead have any possible shape or form: from skins that are foldable, flexible and physical to three-dimensional products that are fully kinetic.

■ PAPERS | BALLROOM C

NEW MOBILE INTERACTIONS

SESSION CHAIR: Matt Jones, *University of Swansea*

PAPER | Back-of-Device Interaction Allows Creating Very Small Touch Devices

Patrick Baudisch, Gerry Chu, *Microsoft Research*, USA/ *Hasso Plattner Institute*, Germany

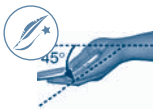
Presents a miniaturized back-of-device interaction prototype. Shows that back-of-device interaction works on devices as small as 0.3" screen diameter, while traditional touchscreens fail. Illustrates new miniature devices made possible.

PAPER | Codex: A Dual Screen Tablet Computer

Ken Hinckley, Morgan Dixon, Raman Sarin, *Microsoft Research*, USA
Francois Guimbretiere, *University of Maryland*, USA
Ravin Balakrishnan, *Microsoft Research*, USA, *University of Toronto*, Canada

Codex is a dual-screen tablet computer with a hinged binding and sensors that detect postures (hinge angles plus the orientation of the device) to facilitate lightweight transitions between usage contexts.

PAPER | Tilt Techniques: Investigating the Dexterity of Wrist-based Input



Mahfuz Rahman, Sean Gustafson, Pourang Irani, *University of Manitoba*, Canada
Sriram Subramanian, *University of Bristol*, UK

We present an interaction framework for tilt-based interfaces and a series of findings that characterize the limits and capabilities of this new interaction mode.

PAPERS | ROOM 302

SECURITY AND PRIVACY

SESSION CHAIR: Shamsi Iqbal, *Microsoft Research*

PAPER | It's Not What You Know, But Who You Know: A Social Approach to Last-resort Authentication

Stuart Schechter, Serge Egelman, *Microsoft Research*, USA
Robert W. Reeder, *Microsoft (TUX)*, USA

We enable users who have forgotten their passwords to prove their identities via previously-identified trustees, who vouch for them. We measure this authentication mechanism's security, reliability, and efficiency.

PAPER | "When I am on Wi-Fi, I am Fearless:" Privacy Concerns & Practices in Everyday Wi-Fi Use

Predrag Klasnja, *University of Washington,* USA
Sunny Consolvo, Jaeyeon Jung, Benjamin M. Greenstein, Louis LeGrand, Pauline Powledge, David Wetherall, *Intel Research*, USA

This paper examines how users from the general public understand and deal with privacy and security threats associated with Wi-Fi use. It also outlines two trajectories of addressing those threats.

PAPER | Who's Viewed You? The Impact of Feedback in a Mobile Location-Sharing Application

Janice Y. Tsai, Patrick Kelley, Paul Drielsma, Lorrie Faith Cranor, Jason I. Hong, Norman Sadeh, *Carnegie Mellon University*, USA

Presents the results of a field deployment of a mobile location-sharing application examining the impact of providing feedback to users. Can help developers of mobile-social technologies allay users' privacy concerns.

PAPERS/NOTES | ROOM 304

WEB SEARCHING AND BROWSING

SESSION CHAIR: Gary Marchionini, *University of North Carolina, Chapel Hill*

PAPER | Exploring Websites through Contextual Facets

Yevgeniy Medynskiy, *Georgia Institute of Technology*, USA
Mira Dontcheva, *Adobe Systems, Inc.*, USA
Steven M. Drucker, *Microsoft Live Labs*, USA

Describes contextual facets, a novel technique for enabling faceted navigation in webpages, and presents results from an exploratory user study comparing contextual facets to a traditional faceted navigation interface.

PAPER | Visual Snippets: Summarizing Web Pages for Search and Revisitation

Jaime Teevan, Edward Cutrell, Danyel Fisher, *Microsoft Research*, USA
Steven M. Drucker, Gonzalo Ramos, *Microsoft Live Labs*, USA
Paul André, *University of Southampton*, UK
Chang Hu, *University of Maryland*, USA

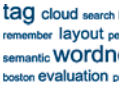
Studies the use of Webpage representations for finding and re-finding. Text representations better support finding new information, while visual representations better support re-finding. "Visual snippets" capture the best of both.

NOTE | From X-Rays to Silly Putty via Uranus: Serendipity and its Role in Web Search

Paul André, *University of Southampton*, UK
Jaime Teevan, Susan T. Dumais, *Microsoft Research*, USA

Study and log analysis of whether the potential for serendipity exists in search results, and whether personalization affects that potential. Can assist in design of search engine (personalization).

NOTE | Semantically Structured Tag Clouds: An Empirical Evaluation of Clustered Presentation Approaches



Johann Schrammel, Michael Leitner, *CURE - Center for Usability Research and Engineering*, Austria
Manfred Tscheligi, *CURE / University of Salzburg*, Austria

Describes an experimental evaluation of semantically structured tag clouds versus random and alphabetic layouts. Can assist designers in deciding when and how to use structured tag clouds.

■ **PAPERS | ROOM 306**

HOSPITALS

SESSION CHAIR: Sharoda Paul, *The Pennsylvania State University*

PAPER | A Mobile Voice Communication System in Medical Setting: Love it or Hate it?

Charlotte Tang, Sheelagh Carpendale, *University of Calgary*, Canada

Reports mixed opinions from a thorough study on the deployment and evaluation of a mobile voice communication system in a hospital setting, based on observed communication strategies. Proposes (re)design guidelines.

PAPER | Clinical Evaluations and Collaborative Design: Developing New Technologies for Mental Healthcare Interventions

David Coyle, Gavin Doherty, *Trinity College Dublin*, Ireland

Presents the collaborative methods applied in designing and evaluating the computer game Personal Investigator. A multi-site clinical evaluation suggests Personal Investigator can assist in engaging adolescents in mental health interventions.

PAPER | I Just Don't Know Why It's Gone: Maintaining Informal Information Use in Inpatient Care

Xiaomu Zhou, Mark S. Ackerman, Kai Zheng, *University of Michigan*, USA

This field-based study examines a hospital's computerization of nursing documents. The findings address healthcare's need to support the nature of nursing work, informal work practices, and the politics of information.

■ **STUDENT RESEARCH COMPETITION | ROOM 309**

STUDENT RESEARCH COMPETITION

SESSION CHAIRS:
Rob Miller, *MIT*
Joanna McGrenere, *University of British Columbia*

JUDGES:
Michael Muller, *IBM Research*, USA
Elizabeth Churchill, *Yahoo! Research*, USA
Robin Jeffries, *Google*, USA
Ivan Poupyrev, *Sony CSL*, Japan
Lorrie Cranor, *Carnegie Mellon University*, USA
Andrew Monk, *York University*, UK
Michael Terry, *University of Waterloo*, Canada
Per Ola Kristensson, *University of Cambridge*, UK
Ben Bederson, *University of Maryland*, USA
Sharon Oviatt, *Incaa Designs*, USA
Andy Cockburn, *University of Canterbury*, New Zealand
Gilbert Cockton, *University of Sunderland*, UK
Simeon Keates, *IT University of Copenhagen*, Denmark
Susanne Bødker, *University of Aarhus*, Denmark
Paul Maglio, *IBM Research*, USA
Melanie Kellar, *Google*, USA
Robert Kraut, *Carnegie Mellon University*, USA
Terry Winograd, *Stanford University*, USA
Jeremy Birnholtz, *Cornell University*, USA
John Canny, *University of California, Berkeley*, USA

This is the final round of the CHI 2009 Student Research Competition, in which the student finalists give short talks about their research to CHI attendees. A panel of expert judges will evaluate and score both the research and the presentation, and select the winning entries.

■ **SPECIAL INTEREST GROUP | ROOM 310**

USER EXPERIENCE EVALUATION – DO YOU KNOW WHICH METHOD TO USE?

ORGANIZERS:
Marianna Obrist, *University of Salzburg*, Austria
Virpi Roto, *Nokia Research Center*, Finland
Kaisa Väänänen-Vainio-Mattila, *University of Technology*, Finland

■ **PAPERS/NOTES | ROOM 311**

SOCIAL SOFTWARE IN OFFICE

SESSION CHAIR: Cliff Lampe, *Michigan State University*

PAPER | Blogging at Work and the Corporate Attention Economy

Sarita Yardi, *Georgia Institute of Technology*, USA
Scott A. Golder, *Cornell University*, USA
Michael J. Brzozowski, *Hewlett-Packard Laboratories*, USA

Describes blog reading and writing in an internal corporate blogging community. Demonstrates how feedback mechanisms and management support positively impact blogging.

PAPER | Learning by Seeing: Photo Viewing in the Workplace

Jennifer Thom-Santelli, *Cornell University*, USA
David R. Millen, *IBM T.J. Watson Research Center*, USA

We examine photo viewing behavior in a large distributed organization and discuss how shared photos might act as an important resource for organizational acculturation.

NOTE | Exploring Awareness Needs and Information Display Preferences Between Coworkers

A.J. Bernheim Brush, Brian R. Meyers, *Microsoft Research*, USA
James Scott, *Microsoft Research*, UK
Gina Venolia, *Microsoft Research*, USA

Our survey of 549 knowledge workers investigated collocated and remote coworker awareness, finding that respondents did not view display location as a compelling way to control the information they shared.

NOTE | Yours, Mine and (Not) Ours: Social Influences on Group Information Repositories

Emilee Rader, *University of Michigan*, USA

The functionality and capabilities of group information repository systems are the same as the desktop metaphor for personal information management, but social factors affect information structure and how repositories evolve.

■ **CASE STUDIES | ROOM 312**

NEW TECHNOLOGIES AND INTERACTIONS

SESSION CHAIR: Hrvoje Benko, *Microsoft Research*

Adaptive Personalisation for Researcher-Independent Brain Body Interface Usage

Paul Gnanayutham, *University of Portsmouth*, UK
Gilbert Cockton, *University of Sunderland*, UK

Dynamically Transparent Window

Peter Dalsgaard, Kim Halskov, *Aarhus University*, Denmark

Evaluating Weight Perception Using Digital Facial-Image Feedback

Ana C. Andrés del Valle, *Accenture Technology Labs*, France
Jeannie Huang, Karen Becerra, Susan Fernandez, *University of California, Berkeley*, USA

■ PAPERS/NOTES | BALLROOM A

TABLETOPS AND SINGLE DISPLAY GROUPWARE

SESSION CHAIR: Clifton Forlines, *Mitsubishi Electric Research Labs*

PAPER | An Evaluation of Coordination Techniques for Protecting Objects and Territories in Tabletop Groupware

David Pinelle, *National Research Council*, Canada
Mutasem Barjawi, Miguel Nacenta, Regan Mandryk, *University of Saskatchewan*, Canada

Introduces three coordination techniques designed to reduce conflicts that occur when indirect input is used in tabletop groupware. The evaluation provides new design insights on improving organization and reducing interference.

PAPER | Territorial Coordination and Workspace Awareness in Remote Tabletop Collaboration

Philip Tuddenham, Peter Robinson, *University of Cambridge*, UK

Investigates work practices in remote collaboration using tabletop interfaces. Highlights differences and similarities in work practices between co-located and remote tabletop collaboration, to inform future\ development of collaboration technologies.

NOTE | Fighting for Control: Children's Embodied Interactions When Using Physical and Digital Representations

Paul Marshall, *The Open University*, UK
Rowanne Fleck, Amanda Harris, *University of Sussex*, UK
Jochen Rick, *The Open University*, UK
Eva Hornecker, *University of Strathclyde / The Open University*, UK
Yvonne Rogers, *The Open University*, UK
Nicola Yuill, *University of Sussex*, UK
Nick Sheep Dalton, *The Open University*, UK

Presents a video analysis of prototyping sessions with children who used both cardboard objects and a multitouch surface. Describes the different embodied strategies adopted to stop others from accessing resources.

NOTE | Measuring the Impact of Third Place Attachment on the Adoption of a Place-Based Community Technology

Shelly D. Farnham, Joseph F. McCarthy, Yagnesh Patel, Sameer Ahuja, Daniel Norman, William R. Hazlewood, Josh Lind, *Strands*, USA

A deployment study of CoCollage -- a community collage on a large display -- and exploration of methodology useful for learning about psycho-social factors that impact usage in third places.

■ DESIGN COMMUNITY EVENTS | BALLROOM B

DESIGNING FOR COLLABORATION

SESSION CHAIR: Robert Fabricant, *frog design*

DESIGN PRACTICE | Artful Surfaces in Design Practices

Dhaval Vyas, *University of Twente*, The Netherlands

DESIGN METHODS | Co-reflection: User Involvement for Highly Dynamic Design Processes

Oscar Tomico, Joep Frens, Kees Overbeeke, *University of Technology Eindhoven*, The Netherlands

DESIGN METHODS | Ten Steps of Integrating User Feedback into the Product Definition Process: A Closed Loop Approach

Jens Bombolowsky, Edmund Eberleh, *SAP AG*, Germany

■ PAPERS | BALLROOM C

STUDYING INTELLIGENT SYSTEMS

SESSION CHAIR: James Fogarty, *University of Washington*

PAPER | I'm Sorry, Dave: I'm Afraid I Won't Do That: Social Aspects of Human-Agent Conflict

Leila Takayama, *Stanford University/Willow Garage*, USA
Victoria Groom, Clifford Nass, *Stanford University*, USA

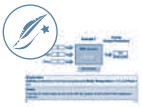
Presents a controlled experiment that investigates the effectiveness of vocal distancing for increasing the acceptability of autonomous agents disagreeing with people. Provides implications for designing politeness into autonomous systems.

PAPER | Machine Intelligence

Alex S. Taylor, *Microsoft Research*, UK

Thought piece reflecting on machine intelligence. Proposes new areas of inquiry and potential directions for research and design.

PAPER | Why and Why Not Explanations Improve the Intelligibility of Context-Aware Intelligent Systems



Brian Y. Lim, Anind K. Dey, *Carnegie Mellon University*, USA
Daniel Avrahami, *Intel Research*, USA

We investigated the impact of Why, Why Not, How To, and What If explanations for improving users' understanding of a decision-tree-based application. Why and Why Not explanations were particularly effective.

■ PAPERS/NOTES | ROOM 302

SYSTEMS FOR CHILDREN

SESSION CHAIR: Allison Druin, *University of Maryland*

PAPER | A Mischief of Mice: Examining Children's Performance in Single Display Groupware Systems with 1 to 32 Mice

Neema Moraveji, *Stanford University*, USA
Kori Inkpen, Edward Cutrell, *Microsoft Research*, USA
Ravin Balakrishnan, *University of Toronto*, Canada

Examines individual performance among 1-32 children on a shared display groupware system in a school setting. Looks at the differential effects of group size and task type on performance.

PAPER | Mobile Media in the Social Fabric of a Kindergarten

Jaana Näsänen, Antti Oulasvirta, Asko Lehmuskallio, *Helsinki Institute for Information Technology HIIT*, Finland

Presents findings on uses and concerns of mobile media that emerged in kindergarten. Discusses how heterogeneity in a user group affects the adoption of mobile media.

NOTE | Designing with Children with Severe Motor Impairments

Anthony J. Hornof, *University of Oregon*, USA

Draws from fieldwork with children with severe motor impairments to propose guidelines for collaborating with such children. Can help designers learn how to work with this population.

NOTE | HeartBeat: An Outdoor Pervasive Game for Children=

Remco Magielse, Panos Markopoulos, *Eindhoven University of Technology*, The Netherlands

HeartBeat illustrates the concept of Head-Up Games: pervasive games for children that support traditional patterns of outdoor play engendering high levels of physical activity and social interaction.

■ PAPERS/NOTES | ROOM 304

NEW INPUT MODALITIES

SESSION CHAIR: Desney S. Tan, *Microsoft Research*

PAPER | Brain Measurement for Usability Testing and Adaptive Interfaces: An Example of Uncovering Syntactic Workload with Functional Near Infrared Spectroscopy

Leanne M. Hirshfield, Erin Treacy Solovey, Audrey Girouard, James Kebinger, Robert J.K. Jacob, Angelo Sassaroli, Sergio Fantini, *Tufts University*, USA

We discuss brain measurement in usability labs and adaptive interfaces. This is the first case of separating syntactic and semantic workload using fNIRs, although we use a specially constructed interface.

PAPER | O' Game, Can You Feel My Frustration?: Improving User's Gaming Experience via StressCam

Chang Yun, Dvijesh Shastri, Ioannis Pavlidis, Zhigang Deng, *University of Houston*, USA

Presents a method that automatically adjusts the game difficulty level from the facial physiology in a contact-free manner. Customizes players' gaming experience to optimize the game's entertainment value.

NOTE | A Performance Model of Selection Techniques for P300-Based Brain-Computer Interfaces

Jean-Baptiste Sauvan, *INRIA/Supélec*, France
Anatole Lécuyer, *INRIA*, France
Fabien Lotte, *INSA/IRISA*, France
Géry Casiez, *University of Lille*, France

Proposes a model to predict the performance of selection techniques using Brain-Computer Interfaces based on P300 signals.

NOTE | Discriminating the Relevance of Web Search Results with Measures of Pupil Size

Flavio T. P. Oliveira, *Google, Inc. / University of California, Berkeley*, USA
Anne Aula, Daniel M. Russell, *Google, Inc.*, USA

Demonstrates that pupil dilation recorded while observing web search results carries information about relevance of results. Discusses the potential and the limitations of using pupillometry in HCI and usability research.

■ PAPERS | ROOM 306

REFLECTING ON DESIGN

SESSION CHAIR: Daniel Fällman, *Umeå Unviersity*

PAPER | Anatomy of a Failure: How We Knew When Our Design Went Wrong, and What We Learned From It

William Gaver, John Bowers, Tobie Kerridge, Andy Boucher, Nadine Jarvis, *University of London*, UK

The failure of a domestic, sensor-based system suggests general themes for diagnosing failure in everyday deployments, and lessons for the development of future interpretive systems.

PAPER | Getting There: Six Meta-Principles and Interaction Design

Gilbert Cockton, *University of Sunderland*, UK

An a priori derivation of meta-principles is based on Heskett's position on design outcomes. Craft-axiological constraints refine six meta-principles that can guide approaches within worth-centred development frameworks for Interaction Design.

PAPER | On Being Supple: In Search of Rigor without Rigidity in Meeting New Design and Evaluation Challenges for HCI Practitioners

Katherine Isbister, *Polytechnic Institute of New York University*, USA
Kristina Höök, *Swedish Institute of Computer Science*, Sweden

HCI practitioners are facing new challenges in design and evaluation that can benefit from the establishment of commonly valued use qualities. We present suppleness as an example.

■ STUDENT DESIGN COMPETITION | ROOM 309

STUDENT DESIGN COMPETITION

SESSION CHAIRS:
Jon Kolko, *frog design*
Mike Glaswer, *Drexel University*

JUDGES:
Carla Diana, *Smart Design*
Anijo Mathew, *IIT*
Ron Wakkary, *Simon Fraser University*

Come watch the judging of the Student Design Competition - often the most exciting work shown at CHI, and a great way to identify top design talent. This year, students took on the topic of local resource use. A predominant cultural shift is underway, as societies begin to embrace the real-world implications of sustainable design. This shift has been described in a number of ways, including "slow design" or "act local, think global"; each description attempts to capture the nature of living a life that brings raw materials and production closer in proximity to their origins. By utilizing resources that are locally produced, and by disposing of these resources in a way that supports the local environment, a regional value system can be established that affords sustainable practices and that financially supports the local culture.

Students were tasked with designing an object, interface, system, or service intended to support the idea of utilizing or consuming local resources rather than global resources, in a sustainable and environmentally efficient manner. The solutions presented clearly illustrate positive value to both local stakeholders and to the local environment in various regions.

■ SPECIAL INTEREST GROUP | ROOM 310

RESEARCH ETHICS IN THE FACEBOOK ERA: PRIVACY, ANONYMITY AND THE IRB

ORGANIZERS:
Nathan Bos, *Johns Hopkins Applied Physics Laboratory*, USA
Karrie G. Karahalios, *University of Illinois*, USA
Marcela Musgrove-Chávez, *University of Illinois*, USA
Erika Shehan Poole, *Georgia Institute of Technology*, USA
John Charles Thomas, *IBM T.J. Watson Research Center*, USA
Sarita Yardi, *Georgia Institute of Technology*, USA

■ PAPERS/NOTES | ROOM 311

TACTILE UI

SESSION CHAIR: Dan Morris, *Microsoft Research*

PAPER | Tactile Motion Instructions for Physical Activities

Daniel Spelmezan, Mareike Jacobs, Anke Hilgers, Jan Borchers, *RWTH Aachen University*, Germany

Introduces tactile feedback as instructions to assist in correcting wrong posture during physical activities. Presents insights into design and perception of full-body vibrotactile patterns during cognitively and physically demanding tasks.

NOTE | Audio or Tactile Feedback: Which Modality When?

Eve Hoggan, Andrew Crossan, Stephen A. Brewster, *University of Glasgow*, UK
Topi Kaaresoja, *Nokia Research Center*, Finland

This paper presents an examination of how environmental noise and disturbance affects performance on touchscreen devices to determine exactly when audio or tactile feedback in a real-world setting becomes ineffective.

NOTE | Tactile Feedback for Predictive Text Entry

Mark D. Dunlop, Finbarr Taylor, *University of Strathclyde*, UK

Predictive text users tend to miss word completions and spelling errors because checking the screen slows entry. We show that tactile feedback for these conditions can speed up entry.

NOTE | Texture Displays: A Passive Approach to Tactile Presentation

Chris Harrison, Scott E. Hudson, *Carnegie Mellon University*, USA

We present a passive tactile approach based on surfaces that can assume different textures. These displays can convey small amounts of information in unobtrusive ways and with little attention demand.

NOTE | TypeRight: A Keyboard with Tactile Error Prevention

Alexander Hoffmann, Daniel Spelmezan, Jan Borchers, *RWTH Aachen University*, Germany

Case study describing development and evaluation of a novel tactile feedback keyboard that supports typists preventing typing errors. Can assist newbies learning touch-typing and advanced typist decreasing the error rate.

■ CASE STUDIES | ROOM 312

EXPERIENCE WITH SOFTWARE AND SYSTEM DEVELOPMENT AND EVALUATION

SESSION CHAIR: Andy Ko, *University of Washington*

It's What It's In: Evaluating the Usability of Large-scale Integrated Systems

Steven R. Haynes, *Pennsylvania State University*, USA

Leveraging Open-Source Software in the Design and Development Process

Collin Green, Irene Tollinger, Christian Ratterman, Guy Pyrzak, Alex Eiser, Lanie Castro, Alonso Vera, *NASA Ames Research Center*, USA

When User Experience Met Agile: A Case Study

Michael Budwig, Soojin Jeong, Kuldeep Kelkar, *PayPal*, USA

■ PAPERS | ROOM 302

GESTURE UIS

SESSION CHAIR: Richard C. Davis, *Singapore Management University*

PAPER | GestureBar: Improving the Approachability of Gesture-based Interfaces

Andrew Bragdon, Robert Zeleznik, *Brown University*, USA
Brian Williamson, *University of Central Florida*, USA
Timothy Miller, *Brown University*, USA
Joseph J. LaViola Jr., *University of Central Florida*, USA

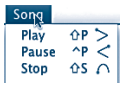
Describes a novel interface for learning gest¬ural interactions that enables a walk-up-and-use exper-ience. Evaluations indicate users can perform complex, ecologically valid tasks in a gestural system without training or introduction.

PAPER | Lean Collaboration Through Video Gestures: Co-ordinating the Production of Live Televised Sport

Mark Perry, *Brunel University*, UK
Oskar Juhlin, Mattias Esbjörnsson, Arvid Engström, *Interactive Institute*, Sweden

We examine professional work and interactions between camera operators and a vision mixer during an ice hockey match to benefit design of mobile multi camera solutions for amateurs.

PAPER | Using Strokes as Command Shortcuts: Cognitive Benefits and Toolkit Support



Caroline Appert, *Université Paris-Sud / CNRS*, France/*IBM Almaden Research Center*, USA
Shumin Zhai, *IBM Almaden Research Center*, USA

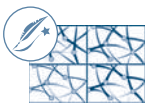
Investigates using stroke gestures as shortcuts to application commands. Empirically measures their cognitive advantages in comparison to keyboard shortcuts. Also demonstrates how to make them easy to implement.

■ PAPERS | ROOM 304

UNDERSTANDING GRAPHS

SESSION CHAIR: Martin Wattenberg, *IBM Research*

PAPER | A User Study on Visualizing Directed Edges in Graphs



Danny Holten, Jarke J. van Wijk, *Eindhoven University of Technology*, The Netherlands

User study on visualizing directed edges in graphs; performance of the standard arrow and alternatives is determined. Can assist in visualizing directed edges by providing recommendations pertaining to various representations.

PAPER | Path Selection: A Novel Interaction Technique for Mapping Applications

Michael Ludwig, Reid Priedhorsky, Loren Terveen, *University of Minnesota*, USA

Presents a novel technique for selecting paths through graph data as found in mapping applications. Experimental evaluation shows improved user performance and satisfaction. Detailed analysis explains why the technique works.

PAPER | Topology-Aware Navigation in Large Networks

Tomer Moscovich, Fanny Chevalier, Nathalie Henry, *Microsoft Research - INRIA Joint Centre*, France
Emmanuel Pietriga, *INRIA / Université Paris-Sud / CNRS*, France
Jean-Daniel Fekete, *INRIA*, France

We develop and study network navigation techniques that make use of graph topology. These allow for effective navigation in otherwise intractably-large networks.

■ PAPERS/NOTES | ROOM 306

COMPUTER MEDIATED COMMUNICATION 2

SESSION CHAIR: Stephen Voida, *University of Calgary*

PAPER | Sharing Empty Moments: Design for Remote Couples

Danielle M. Lottridge, *University of Toronto*, Canada
Nicolas Masson, Wendy E. Mackay, *INRIA / Université Paris-Sud*, France

A study found remote couples' unmet intimate communication need: to share 'empty moments'. A technology probe (MissU) mapped the design space from the perspectives of social science, design and technology.

PAPER | Supporting Content and Process Common Ground in Computer-Supported Teamwork

Gregorio Convertino, Helena M. Mentis, Mary Beth Rosson, Aleksandra Slavkovic, John M. Carroll, *Pennsylvania State University*, USA

We propose the design of a distributed geo-collaboration software prototype. We evaluate it with a controlled experiment showing that it supports content and process common ground and offsets the costs due to distributed setting. We then draw implications for design.

NOTE | Conversation Clusters: Grouping Conversation Topics through Human-Computer Dialog

Tony Bergstrom, Karrie Karahalios, *University of Illinois at Urbana-Champaign*, USA

Describes a socio-technical system to augment, archive, and recollect conversations via visualization. Our implementation leverages speech recognition, human intelligence, Wikipedia, and clustering algorithms to visually summarize conversation.

NOTE | Effects of Real-time Transcription on Non-native Speaker's Comprehension in Computer-mediated Communications

Yingxin Pan, Danning Jiang, *IBM China Research Lab*, China
Michael Picheny, *IBM T.J. Watson Research Center,* USA
Yong Qin, *IBM China Research Lab*, China

This paper validated the value of real-time transcription on improving non-native speaker¡¦s comprehension in synchronous computed-mediated communications by performing an empirical study.

■ **SPECIAL INTEREST GROUP | ROOM 310**

API USABILITY

ORGANIZERS:
John M. Daughtry, *Pennsylvania State University*, USA
Umer Farooq, *Microsoft Corporation*, USA
Jeffrey Stylos, *Carnegie Mellon University*, USA
Brad A. Myers, *Carnegie Mellon University*, USA

■ **PAPERS | ROOM 311**

INFORMED DESIGN

SESSION CHAIR: Winslow Burleson, *Arizona State University*

PAPER | Interaction Criticism and Aesthetics

Jeffrey Bardzell, *Indiana University*, USA

PAPER | Understanding Knowledge Management Practices for Early Design Activity and Its Implications for Reuse

Moushumi Sharmin, Brian P. Bailey, Cole Coats, Kevin Hamilton, *University of Illinois at Urbana-Champaign*, USA

This paper explores the state of the art of aesthetics and critical theory in HCI design theory and applies it to notions of the user and the interface.

TOCHI PAPER | Towards a theory of user judgment of aesthetics and user interface quality

J. Hartman, Alistair Sutcliffe, Antonella De Angeli, *University of Manchester,* UK

Explains how users judge the quality of user interfaces, provides principles to judge trade-offs between content, usability, aesthetics and other UI qualities to inform presentation of products and UIs.

■ **alt.chi | ROOM 312**

METHOD IN THE MADNESS

SESSION CHAIR: Tovi Grossman, *Autodesk Research*

Citedness, Uncitedness, and the Murky World Between

Ian Scott MacKenzie, *York University*, Canada

HCI for the Real World

Nicholas Knouf, *Cornell University*, USA

Heat, Fire and Temperature: The Industrial Revolution and HCI

David J. Gilmore, *Logitech*, USA

Out From Behind the Curtain: Learning From a Human Auditory Display

Peter Parente, *IBM*, USA
Gary Bishop, *University of North Carolina*, USA

Some Statistical Analyses of CHI

Joseph 'Jofish' Kaye, *Nokia Research Center,* USA

■ CLOSING PLENARY – BALLROOM A/B/C

DREAMING OF THE IMPOSSIBLE

Kees (C.J.) Overbeeke
***Eindhoven University of Technology,* The Netherlands**

I believe the following:

- Design is about people. It is about our lives, our hopes and dreams, our loneliness and joy, our sense of beauty and justice, about the social and the good. It is about being in the world.
- There is a primacy of action. In accordance with Merleau-Ponty's and others' approaches to epistemology, I strongly believe that meaning cannot be detached from action. Meaning is in (inter)action. There is a primacy of embodiment.
- A design theory consequently must be a theory of action and the embodied in the first place, and of meaning in the second, and not the other way around. Reflection on action is the source of knowledge.
- The methods used must be rooted in design practice, in the socio-cultural and multi-cultural environment, invigorated by experimental and technological methods from other disciplines.
- Intuition and common sense should be high on the agenda. They should be exploited to the maximum. Le sens commun n'est pas si commun, as Voltaire said.
- Design practice and research are powerful generators of knowledge. They are a way of looking at the world and transforming it. Just as classical disciplines are. Design teaching and research should therefore be interwoven.

Twenty-five years of design teaching and research taught me that the essential power of design is in integration. Looking at the future, I see an integration of science, engineering and design, where design leads the way. This integration leads to real innovation. That is what we are doing at Industrial Design in Eindhoven. It seems impossible, but we should insist. Dreaming of the impossible pushes us to do great things.

Kees Overbeeke studied psychology at the Katholieke Universiteit Leuven, Belgium (Ma 1974). After working there, he moved to the Faculty of Industrial Design Engineering at Delft University of Technology, the Netherlands, where he gained his PhD on spatial perception on flat screens (1988). He headed the group of Form Theory as Associate Professor until his move to the Department of Industrial Design at Eindhoven University of Technology in 2002. During the academic year 2005-2006 he was Distinguished Nierenberg Chair at Design Carnegie Mellon University, Pittsburgh, USA. In 2006 he was appointed full professor at Eindhoven University of Technology. He now heads the Designing Quality in Interaction group (DQI). DQI consists of seven PhD-ed designers, and is one of the leading design research groups in the world. He strongly believes that design research should be theory driven, and that collaboration with industry is paramount (among others, collaboration with Philips, BMW, Unilever, Nissan, Adidas, and Microsoft). Kees Overbeeke initiated several new subjects in design research: design and emotion, funology, aesthetics of interaction, rich interaction and design and ethics. He published extensively on these subjects in journals, books and conference papers. He initiated the "Design and Emotion" and the "Designing for Pleasurable Products and Interfaces DPPI" conferences. He was keynote speaker and member of the scientific committee of several international conferences, and he is also editor and member of the editorial board of several leading international design journals.

COURSE 24 | ROOM 206

AJAX - DESIGN AND USABILITY

09:00 - 13:00

INSTRUCTOR:
William Hudson, *Syntagm Ltd*, UK

Benefits: This half-day interactive course breaks new ground in relating Ajax technology to key principals of Computer-Human Interaction.

Audience: Web and intranet designers, information architects, usability and HCI professionals. No specialist skills or knowledge are required.

COURSE 21 | ROOM 207

NEW PARADIGMS FOR ADAPTIVE INTERACTION

09:00 - 13:00

INSTRUCTORS:
Krzysztof Z. Gajos, *Harvard University*, USA
Anthony Jameson, *FBK-irst*, Italy

Audience: Practitioners and researchers who are or will be involved in the design, evaluation, and/or deployment of systems that adapt to their users and who can benefit from a representative case base of innovative, tested approaches.

COURSE 23 | ROOM 210

LEADING INNOVATION WORKSHOPS: ALIGNING CROSS-FUNCTIONAL TEAMS AROUND BREAKTHROUGH IDEAS

09:00 - 13:00

INSTRUCTORS:
Jim E. Nieters, Heather M. Cassano, *Yahoo!, Inc.*, USA
Gesche Joost, *Deutsche Telekom Laboratories*, Germany

Benefits: We as researchers and designers want to design products that change the world – to engage in strategic design. Often though, designers and researchers are stuck with incrementalism: Designing minor new features presented by another group for UX to design (whether the UX team agrees with this direction or not). Perhaps we find ourselves in work routines that do not provide space to think differently. This course gives you the tools to innovate, and align multi-disciplinary teams around your ideas. Attendees learn how to lead workshops that foster collaboration, trust, and free expression. These workshops enable intensive brainstorming, purposeful play, design, user testing, and rapid iteration. Learn how innovative companies, such as *Deutsche Telekom Laboratories* and Yahoo Inc. identify, design, and bring great products to market.

Audience: This course enables designers, researchers, managers, product managers, engineers, students, and educators to solve design challenges and rapidly gain alignment across organizations. It requires no prerequisite background. It is designed for anyone who wants to work collaboratively and creatively, for those who want to identify, design, and deliver ideas that change the way people interact in a domain.

COURSE 28 | ROOM 206

DESIGNING A TASK-FOCUSED CONCEPTUAL MODEL

14:30 - 16:00

INSTRUCTOR:
Jeff Johnson, *UI Wizards, Inc.*, USA

Benefits: After completing this class, participants will:

- Know the benefits of designing a task-focused, coherent conceptual model of an application before designing the application's user interface.
- Understand the components of a conceptual model (e.g., object-action analysis), and how to create them.
- Have experience in designing a conceptual model for a software application.

Audience: Software designers and developers of all experience levels. Also: Q/A engineers, usability testers, and managers.

COURSE 27 | ROOM 210

DESIGNING FOR THE SCENT OF INFORMATION: ADVANCED CONCEPTS

14:30 - 16:00

INSTRUCTOR:
Jared M. Spool, *User Interface Engineering*

Benefits: You work hard providing top-notch content on your site. Will your users find it? If they don't find it, all that effort is for nothing. What can you do to guarantee that users find the content they've come looking for? You'll come away with the most up-to-the-minute research on how users actually navigate sites.

As users traverse through a web site, they encounter different types of pages, each with unique functions. The designers of the best sites understand the different functions of each type of page on a web site, and design the pages differently based on their specific purpose.

Our research has uncovered three ways to predict when users will fail finding the content they desire. We'll show you what these three predictors are and how to counter the effects in your design.

We will share the secrets behind successful designs including Lands' End, the Bureau of Labor and Statistics, CNN, and the BBC. You'll learn why trigger words are critical to users successfully finding their content, why the best sites prevent users from using Search, how exposing a site's hierarchy can increase the success of the user, how designing longer pages helps users find what they seek, and how to best use lateral links and breadcrumbs.

Audience: Web Designers & Usability Practitioners


CHI 2009
DIGITAL LIFE • NEW WORLD

Notes

Posters /
Exhibits

Posters will be spotlighted in the Poster Area in the Exhibit Hall C according to the groupings listed below. Poster authors are scheduled to stand by their posters during times indicated below. Please visit the posters each day, see all the excited work being done, and discuss new ideas with poster presenters.

Tuesday (10:30-11:30)
- Work-In-Progress: WIP1-95

Wednesday (10:30-11:30)
- Work-In-Progress: WIP96-192

Thursday (10:30-11:30)
- Student Design Competition: SDC1-10
- Student Research Competition: SRC1-27
- Doctoral Consortium: DC1-15
- Workshops: W1-25

STUDENT DESIGN COMPETITION

SDC01 | CropConnect: Enabling Community Supported Agriculture
Michael Van Waardhuizen, Catherine Peloquin, *Iowa State University*, USA
Uttam Kokil, *University of Minnesota*, USA

SDC02 | Dress for Success: Automating the Recycling of School Uniforms
Fatima Boujarwah, Amha Mogus, Jennifer Stoll, Kanan Garg, *Georgia Institute of Technology*, USA

SDC03 | Edible Earth: Dining on Local and Seasonal Ingredients
Ross Bohner, Nikki D'Adamo, Adam Faeth, Sara R. Kaplan, William E. Marsh, *Iowa State University*, USA

SDC04 | eXtend: Reducing E-Waste through Redistribution of Local IT Resources
Annie Fang, Rahan Khozein, Sergio Mendez-Baiges, Eunice Shin, *University of Michigan*, USA

SDC05 | LocalBuy
Li Li, Nan Chen, Wentao Wang, Jenica Baty, *University of Michigan*, USA

SDC06 | IFresh: Promoting Local Produce Consumption
Jiang Yang, Maureen Hanratty, Geoffrey Ho, Xiao Wei, *University of Michigan*, USA

SDC07 | TreasureHunter: a system to increase the reuse of local used goods
Sanghyuk Koh, Amy Kuo, Debra Lauterbach, Noah Liebman, Andrea McVittie, *University of Michigan*, USA

SDC08 | WantKnot: Connecting Organizations to Improve Their Waste Management Practices
Jared Bauer, Elizabeth Blankenship, Leanna Gingras, Mark Goetz, *University of Michigan*, USA

SDC09 | WattBot: A Residential Electricity Monitoring and Feedback System
Dane Petersen, Jay Steele, Joe Wilkerson, *Indiana University Bloomington*, USA

SDC10 | Weight Your Waste
Alex Gartland, Paulina Piasek, Aisling Carren, *Institute of Art, Design and Technology*, Ireland

STUDENT RESEARCH COMPETITION

SRC01 | A Personalized Walk through the Museum: The CHIP Interactive Tour Guide
Ivo Roes, Natalia Stash, Yiwen Wang, *Eindhoven University of Technology*, The Netherlands
Lora Aroyo, *VU University Amsterdam*, The Netherlands

SRC02 | activeNotes: Computer-Assisted Creation of Patient Progress Notes
Lauren Wilcox, *Columbia University*, USA
Jie Lu, Jennifer Lai, *IBM TJ Watson*, USA
Steven Feiner, Desmond Jordan, *Columbia University*, USA

SRC03 | An Evaluation of Techniques for Selecting Moving Targets
Tyler J. Gunn, Pourang Irani, John Anderson, *University of Manitoba*, Canada

SRC04 | Bringing Usability to Industrial Control Systems
Marcus Reul, *RWTH Aachen University*, Germany

SRC05 | Comparing Emotions Using Acoustics and Human Perceptual Dimensions
Keshi Dai, Harriet Fell, *Northeastern University*, USA
Joel MacAuslan, *Speech Technology & Applied Research*, USA

SRC06 | Designing a Privacy Label: Assisting Consumer Understanding of Online Privacy Practices
Patrick Gage Kelley, *Carnegie Mellon University*, USA

SRC07 | Designing a wearable social network
Yin He, Thecla Schiphorst, *Simon Fraser Univeristy*, Canada

SRC08 | Designing Interactive Information Access Technologies for Small Scale Rural Indian Farmers
Rajasee Rege, *Indiana University*, USA

SRC09 | Direct Manipulation in Mobile Gesture Interaction Using Wearable Tactile Displays
Seungyon Lee, Thad Starner, *Georgia Institute of Technology*, USA

SRC10 | Effects of Spatial Locations and Luminance on Finding and Re-finding Information in a Desktop Environment
JungAa Moon, Wai-Tat Fu, *University of Illinois at Urbana-Champaign*, USA

SRC11 | Emotion Barometer of Reading: User Interface Design of a Social Cataloging Website
Hsia-Ching Chang, *University at Albany / State University of New York*, USA

SRC12 | Exploring the Cognitive Consequences of Social Search
Brynn M. Evans, *University of California, San Diego*, USA
Sanjay Kairam, Peter Pirolli, *Palo Alto Research Center*, USA

SRC13 | Facilitating Benign Deceit in Mediated Communication
Wendy Moncur, *University of Aberdeen/University of Dundee*, UK
Judith Masthoff, Ehud Reiter, *University of Aberdeen*, UK

SRC14 | Generating Affective Music Icons in the Emotion Plane
Hyun-Ju Kim, Min-Joon Yoo, Ji-Yong Kwon, In-Kwon Lee, *Yonsei University*, South Korea

SRC15 | Influences of Mood on Information Seeking Behavior
Mimi Zhang, Bernard J. Jansen, *The Pennsylvania State University*, USA

SRC16 | InPhase: A Communication System Focused on "Happy Coincidences" of Daily Behaviors
Hitomi Tsujita, Koji Tsukada, Iitiro Siio, *Ochanomizu University*, Japan

SRC17 | Investigating Computer Game Immersion and the Component Real World Dissociation
Charlene Jennett, Anna L. Cox, *UCL Interaction Centre*, UK
Paul Cairns, *University of York*, UK

SRC18 | KTE2: An Engine for Kinetic Typography
Zhiquan Yeo, Scott E. Hudson, *Carnegie Mellon University*, USA

SRC19 | Learning Design Principles for a Collaborative Information Seeking System
Chirag Shah, Gary Marchionini, Diane Kelly, *UNC Chapel Hill*, USA

SRC20 | Making sense of accelerometer measurements in pervasive physical activity applications
Yuichi Fujiki, *University of Houston*, USA
Panagiotis Tsiamyrtzis, *Athens University of Economics and Business*, Greece
Ioannis Pavlidis, *University of Houston*, USA

SRC21 | Mental Workload in Multi-Device Personal Information Management
Manas Tungare, Manuel Pérez-Quiñones, *Virginia Tech*, USA

SRC22 | Multi-touch Interface for Controlling Multiple Mobile Robots
Jun Kato, Daisuke Sakamoto, *The University of Tokyo*, Japan
Masahiko Inami, *Keio University*, Japan
Takeo Igarasahi, *The University of Tokyo*, Japan

SRC23 | ReadingMate: An Infrared-Camera-Based Content Stabilization Technique to Help Joggers Read While Running on a Treadmill
Bum chul Kwon, Ji soo Yi, *Purdue University*, USA

SRC24 | Spatio-Temporal Interest Points for Video Analysis
Ramsin Khoshabeh, James Hollan, *University of California, San Diego*, USA

SRC25 | Storytelling through Drawings: evaluating tangible interfaces for children
Cristina Sylla, Pedro Branco, Clara Coutinho, Maria Eduarda Coquet, *University of Minho*, Portugal

SRC26 | TripTip; A trip planning service with tag-based recommendation
Jinyoung Kim, Hyungjin Kim, Jung-hee Ryu, *KAIST*, South Korea

SRC27 | Web Browsing Behavior under Poor Connectivity
Jay Chen, Lakshmi Subramanian, *New York University*, USA
Kentaro Toyama, *Microsoft Research India*, India

DOCTORAL CONSORTIUM

DC01 | Adaptive Brain-Computer Interface
Audrey Girouard, *Tufts University*, USA

DC02 | Phatics and the Design of Community
Kevin Makice, *Indiana University*, USA

DC03 | Studying Appropriation of Everyday Technologies - a Cognitive Approach
Antti Salovaara, *Helsinki Institute for Information Technology*, Finland

DC04 | Contemporary Domestic Infrastructures and Technology Design
Marshini Chetty, *Georgia Institute of Technology*, USA

DC05 | Users' Ongoing Work on Managing Computational Artifacts
Jina Huh, *University of Michigan*, USA

DC06 | Visualization and Interaction Techniques for Mobile Devices
Anne Roudaut, *TELECOM ParisTech – CNRS*, France

DC07 | Associative Personal Information Management
Jonathan Diehl, *RWTH Aachen University*, Germany

DC08 | Detecting Cognitive and Physical Stress Through Typing Behavior
Lisa M. Vizer, *UMBC*, USA

DC09 | Enabling Always-Available Input: through on-body interfaces
T. Scott Saponas, *University of Washington*, USA

DC10 | Gaze-Augmented Manual Interaction
Hans-Joachim Bieg, *University of Konstanz*, Germany

DC11 | Investigating the Psychology of Task-based and Presentation-based UI Customization
Sampada S. Marathe, *Media Effects Research Lab*, USA

DC12 | Collaborative Translation by Monolingual Users
Chang Hu, *University of Maryland*, USA

DC13 | Supporting Privacy by Preventing Misclosure
Kelly E. Caine, *Georgia Institute of Technology*, USA

DC14 | Social Groups, Social Media, and Civic Participation of High School Youth: Concepts and Methods for Design Implications
Peyina Lin, *University of Washington*, USA

DC15 | Improving the Learnability of Mobile Device Applications for Older Adults
Rock Leung, *University of British Columbia*, Canada

WORKSHOPS

W01 | The Reign of Catz & Dogz at CHI 2009
Shaun Lawson, *University of Lincoln*, United Kingdom
Thomas Chesney, *University of Nottingham*, United Kingdom

W02 | Age Matters: Bridging the Generation Gap through Technology-Mediated Interaction
David A. Harley, *University of Sussex*, UK
Sri H. Kurniawan, *University of California, Santa Cruz*, USA
Geraldine Fitzpatrick, *University of Sussex*, UK
Frank Vetere, *University of Melbourne*, Australia

W03 | Building a Unified Framework for the Practice of eXperience Design
John Zimmerman, Jodi Forlizzi, *Carnegie Mellon University*, USA
Ilpo Koskinen, *University of Art and Design*, Finland

W04 | The Changing Face of Digital Science: New Practices in Scientific Collaborations
Cecilia R. Aragon, Sarah Poon, *Lawrence Berkeley National Laboratory*, USA
Claudio T. Silva, *University of Utah*, USA

W05 | Computational Creativity Support: Using Algorithms and Machine Learning to Help People Be More Creative
Dan Morris, *Microsoft Research*, USA
Jimmy Secretan, *University of Central Florida*, USA

W06 | Engagement by Design
Timothy W. Bickmore, *Northeastern University*, USA
Sunny Consolvo, *Intel Research*, USA
Stephen S. Intille, *Massachusetts Institute of Technology*, USA

W07 | Whole Body Interaction
David England, *Liverpool John Moores University*, UK
Eva Hornecker, *Strathclyde University Glasgow*, UK
Chris Roast, *Sheffield Hallam University*, UK
Pablo Romero, *University of Sussex*, UK
Paul Fergus, *Liverpool John Moores University*, UK
Paul Marshall, *Open University*, UK

W08 | Mobile User Experience Research: Challenges, Methods & Tools
Yelena Nakhimovsky, *Google, Inc.*, USA
Dean Eckles, *Nokia Research Center*, USA
Jens Riegelsberger, *Google, Inc.*, UK

W09 | Location and the Web (LocWeb 2009)
Erik Wilde, *University of California, Berkeley*, USA
Susanne Boll, *University of Oldenburg*, Germany
Keith Cheverst, *Lancaster University*, UK
Peter Fröhlich, *Telecommunications Research Center*, Austria
Ross Purves, *University of Zürich*, Switzerland
Johannes Schöning, *University of Münster*, Germany

W10 | Multitouch and Surface Computing
Steven C. Seow, Dennis Wixon, *Microsoft Corporation*, USA
I. Scott MacKenzie, *York University*, Canada
Giulio Jacucci, Ann Morrison, *Helsinki Institute for Information Technology*, Finland
Andrew Wilson, *Microsoft Corporation*, USA

W11 | Evaluating New Interactions in Healthcare: Challenges and Approaches
Rebecca Randell, *City University London*, UK
Geraldine Fitzpatrick, *University of Sussex*, UK
Stephanie Wilson, *City University London*, UK
Lena Mamykina, *Georgia Institute of Technology*, USA
Charlotte Tang, *University of Calgary*, Canada

W12 | Workshop on End User Programming for the Web
Allen Cypher, Tessa Lau, Jeffrey Nichols, *IBM Almaden Research Center*, USA
Mira Dontcheva, *Adobe Systems, Inc.*, USA

W13 | DIY for CHI: Methods, Communities, and Values of Reuse and Customization
Leah Buechley, *Massachusetts Institute of Technology*, USA
Eric Paulos, *Carnegie Mellon University*, USA
Daniela K. Rosner, *University of California*, Berkeley, USA
Amanda Williams, *University of California*, Irvine, USA

W14 | Designing for Reflection on Experience
Corina Sas, Alan Dix, *Lancaster University*, UK

W15 | Challenges in Evaluating Usability and User Experience of Reality-Based Interaction
Georgios Christou, *European University*, Cyprus
Effie Lai-Chong Law, *ETH*, Switzerland
William Green, *Philips Research*, The Netherlands
Kasper Hornbaek, *University of Copenhagen*, Denmark

W16 | Programming Reality: From Transitive Materials to Organic User Interfaces
Marcelo Coelho, *Massachusetts Institute of Technology*, USA
Ivan Poupyrev, *Sony Computer Science Laboratories, Inc.*, Japan
Sajid Sadi, *Massachusetts Institute of Technology*, USA
Roel Vertegaal, *Queen's University*, Canada

W17 | Social Mediating Technologies: Developing the Research Agenda
Alistair Sutcliffe, Victor Gonzalez, *Manchester University*, UK
Robert E. Kraut, *Carnegie Mellon University*, USA

W18 | Crowd Computer Interaction
Barry Brown, *University of California, San Diego*, USA
Kenton O'Hara, *CSIRO/HxI*, Australia
Timothy Kindberg, *Hewlett-Packard Laboratories*, UK
Amanda Williams, *University of California, Irvine* , USA

W19 | Sensemaking Workshop CHI 2009
Daniel M. Russell, *Google, Inc.*, USA
Peter Pirolli, *Palo Alto Research Center*, USA
George Furnas, *University of Michigan*, USA
Stuart K. Card, Mark Stefik, *Palo Alto Research Center*, USA

W20 | Human-centered Computing in InternationalDevelopment
Nithya Sambasivan, Melissa Ho, Matthew Kam, *University of California, Berkeley*, USA
Neesha Kodagoda, *Middlesex University*, UK
Susan M. Dray, *Dray & Associates, Inc.*, USA
John C. Thomas, *IBM T.J. Watson Research Center*, USA
Ann Light, *Queen Mary University of London*, UK
Kentaro Toyama, *Microsoft Research*, India

W21 | Tangibles for Children, the Challenges
Bieke Zaman, *KULeuven*, Belgium
Vero Vanden Abeele, *GroepT - KULeuven associatie*, Belgium
Panos Markopoulos, *Eindhoven University of Technology*, The Netherlands
Paul Marshall, *Open University*, UK

W22 | Interacting with Temporal Data
Wendy E. Mackay, *INRIA/Université Paris-Sud*, France
Max G. Van Kleek, *Massachusetts Institute of Technology*, USA
Aurélien Tabard, *INRIA/Université Paris-Sud*, France

W23 | Best Practices in Longitudinal Research
Catherine Courage, *Salesforce.com*, USA
Jhilmil Jain, *Hewlett-Packard Laboratories*, USA
Stephanie Rosenbaum, *Tec-Ed, Inc.*, USA

W24 | Developing Shared Home Behavior Datasets to Advance HCI and Ubiquitous Computing Research
Stephen S. Intille, Jason Nawyn, *Massachusetts Institute of Technology*, USA
Beth Logan, *Intel Corporation*, USA
Gregory D. Abowd, *Georgia Institute of Technology*, USA

W25 | Defining the Role of HCI in the Challenges of Sustainability
Elaine M. Huang, *Motorola Research*, USA
Eli Blevis, *Indiana University*, USA
Jennifer Mankoff, *Carnegie Mellon University*, USA
Lisa P. Nathan, *University of Washington*, USA
Bill Tomlinson, *University of California, Irvine*, USA

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Hyung-il Ahn, Dustin A. Smith, *Massachusetts Institute of Technology*, USA

WIP002 | Co-located Collaborative Web Search: Understanding Status Quo Practices
Saleema Amershi, *University of Washington*, USA
Meredith Ringel Morris, *Microsoft Research*, USA

WIP003 | Thinking with Hands: An Embodied Approach to the Analysis of Children's Interaction with Computational Objects
Alissa N. Antle, Milena Droumeva, Daniel Ha, *Simon Fraser University*, Canada

WIP004 | Springboard: Exploring Embodiment, Balance and Social Justice
Alissa N. Antle, Greg Corness, Milena Droumeva, *Simon Fraser University*, Canada

WIP005 | Multilingual Search Strategies
Anne Aula, Melanie Kellar, *Google, Inc.*, USA

WIP006 | A Biologically Inspired Approach to Learning Multimodal Commands and Feedback for Human-Robot Interaction
Anja Austermann, *SOKENDAI*, Japan
Seiji Yamada, *National Institute of Informatics*, Japan

WIP007 | BubbleWrap: A Textile-Based Electromagnetic Haptic Display
Olivier Bau, *INRIA Saclay & LRI*, France
Uros Petrevski, *ENSCI & NoDesign*, France
Wendy E. Mackay, *INRIA Saclay & LRI*, France

WIP008 | Towards New Metrics for Multitasking Behavior
Raquel Benbunan-Fich, Rachel F. Adler, Tamilla Mavlanova, *City University of New York* USA

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Nadia Boukhelifa, David J. Duke, *University of Leeds*, UK

WIP010 | Using Temporal Patterns (T-Patterns) to Derive Stress Factors of Routine Tasks
Oliver Brdiczka, *Palo Alto Research Center*, USA
Norman Makoto Su, *University of California, Berkeley*, USA
Bo Begole, *Palo Alto Research Center*, USA

WIP011 | The Creativity Support Index
Erin A. Carroll, Celine Latulipe, *University of North Carolina*, USA

WIP012 | Automatic Storytelling in Comics: A Case Study on World of Warcraft
Chia-Jung Chan, *Academia Sinica*, Taiwan
Ruck Thawonmas, *Ritsumeikan University,* Japan
Kuan-Ta Chen, *Academia Sinica*, Taiwan

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Samuel Hsiao-Heng Chang, Lachlan Stuart, Beryl Plimmer, *University of Auckland*, New Zealand

WIP014 | Product Interest and Engagement Scale, Beta (PIES-beta): Initial Development
Christopher N. Chapman, *Microsoft Corporation*, USA
Michal Lahav, *Sakson & Taylor*, USA
Edwin Love, *Western Washington University*, USA
James L. Alford, *Volt Information Sciences*, USA

WIP015 | Exploring the Design of Accessible Goal Crossing Desktop Widgets
Eun Kyoung Choe, Kristen Shinohara, Parmit K. Chilana, Morgan Dixon, Jacob O. Wobbrock, *University of Washington*, USA

WIP016 | Supporting Family Engagement in Weight Management
Nathalie Colineau, Cecile Paris, Peter Marendy, Dipak Bhandari, Yanfeng Shu, *CSIRO - ICT Centre*, Australia

WIP017 | Rehabilitation of Handwriting Skills in Stroke Patients Using Interactive Games: A Pilot Study
Jennifer Curtis, Loes Ruijs, Maartje de Vries, Robert Winters, Jean-Bernard Martens, *Eindhoven University of Technology*, The Netherlands

WIP018 | Supporting Intercultural Collaboration with Dynamic Feedback Systems: Preliminary Evidence from a Creative Design Task
E. Ilana, *Diamant University of Pittsburgh*, USA
Andy Echenique, Brian Y. Lim, *Carnegie Mellon University*, USA
Gilly Leshed, Susan R. Fussell, *Cornell University*, USA

WIP019 | Evaluating Non-Interactive Domestic Situated SMS Messaging
John Downs, Beryl Plimmer, *University of Auckland*, New Zealand

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Dieter Drobny, Malte Weiss, Jan Borchers, *RWTH Aachen University*, Germany

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Alessandro Febretti, *University of Illinois*, USA
Franca Garzotto, *Politecnico di Milano*, Italy

WIP022 | PuyoSheet and PuyoDots: Simple Techniques for Adding Button-push "Feeling to Touch Panels"
Masaaki Fukumoto, *NTT DoCoMo Research Labs.*, Japan

WIP023 | Spectator Understanding of Error in Performance
Cavan A. Fyans, Michael Gurevich, Paul Stapleton, *Queen's University Belfast*, UK

WIP024 | Can An ARG Run Automatically?
Jennefer Hart, *Lancaster University*, UK
Josephine Reid, *HP Laboratories*, UK

WIP025 | Metamouse: Multiple Mice for Legacy Applications
Kurtis Heimerl, Divya Ramachandran, *University of California, Berkeley*, USA
Joyojeet Pal, *University of Washington*, USA
Eric Brewer, Tapan S. Parikh, *University of California, Berkeley*, USA

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Junko Ichino, Tomohiro Makita, Shun'ichi Tano, Tomonori Hashiyama, *University of Electro-Communications*, Japan

WIP027 | Imaging-Based Cosmetics Advisory Service
Jhilmil Jain, Nina Bhatti, *Hewlett-Packard Labs*, USA

WIP028 | User Experience Evaluation in the Wild
Francis Jambon, Brigitte Meillon, *Grenoble Universities*, France

WIP029 | Predicting Query Reformulation During Web Searching
Bernard J. Jansen, Danielle Booth, *Pennsylvania State University*, USA
Amanda Spink, *Queensland University of Technology*, Australia

WIP030 | Micro-blogging as Online Word of Mouth Branding
Bernard J. Jansen, Mimi Zhang, Kate Sobel, *Pennsylvania State University*, USA
Abdur Chowdury, *Twitter, Inc.*, USA

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Raine A. Kajastila, Tapio Lokki, *Helsinki University of Technology*, Finland

WIP032 | The Effect of Affective Iconic Realism on Anonymous Interactants' Self-Disclosure
Sin-Hwa Kang, Jonathan Gratch, *USC ICT*, USA
James H. Watt, *Rensselaer Polytechnic Institute*, USA

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Jeroen Keijzers, Elke den Ouden, Yuan Lu, *Eindhoven University of Technology*, The Netherlands

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Hyunjung Kim, Woohun Lee, *KAIST*, South Korea

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Lisa Kleinman, *University of Texas*, USA

WIP036 | Assisted-Care Robot Initiation of Communication in Multiparty Settings
Yoshinori Kobayashi, Yoshinori Kuno, Hitoshi Niwa, Naonori Akiya, Mai Okada, Keiichii Yamazaki, *Saitama University*, Japan
Akiko Yamazaki, *Tokyo University of Technology*, Japan

WIP037 | Haptic Feedback in Remote Pointing
Laurens R. Krol, *Eindhoven University of Technology*, The Netherlands
Dzmitry Aliakseyeu, *Philips Research* Europe, The Netherlands
Sriram Subramanian, *University of Bristol*, UK

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Christian Kruschitz, *University of Klagenfurt*, Austria

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Alex P. Lambert, Stephen M. Bezek, Karrie G. Karahalios, *University of Illinois*, USA

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Johann Ari Larusson, Richard Alterman, *Brandeis University*, USA

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Edith Law, *Carnegie Mellon University*, USA
Anton Mityagin, Max Chickering, *Microsoft Live Labs*, USA

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Hee Rin Lee, Carl DiSalvo, *Georgia Institute of Technology*, USA

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Min Kyung, Tawanna Dillahunt, Bryan Pendleton, Robert E. Kraut, Sara Kiesler, *Carnegie Mellon University*, USA

WIP044 | How Do People Talk to a Robot? An Analysis of Human-Robot Dialogues in the Real World
Min Kyung Lee, Maxim Makatchev, *Carnegie Mellon University*, USA

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Shanshan Ma, Susan Wiedenbeck, *Drexel University*, USA

WIP046 | Lessons from Participatory Design with Adolescents on the Autism Spectrum
Miriam Madsen, Rana el Kaliouby, Micah Eckhardt, Mohammed E. Hoque, Matthew S. Goodwin, Rosalind Picard, *Massachusetts Institute of Technology*, USA

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Hiroyuki Manabe, Masaaki Fukumoto, *NTT DoCoMo, Inc.*, Japan

WIP048 | Emotional Gaze Behavior Generation in Human- agent interaction
Xia Mao, Zheng Li, Yuli Xue, *Beihang University*, China

WIP049 | Implementing Emotion-Based User-Aware E-Learning
Xia Mao, Zheng Li, *Beihang University*, China

WIP050 | Enhancing Brain-Machine Interface Throughput Using Simultaneous Activation Detection
Rudolph L. Mappus IV, Paul M. Corballis, Melody M. Jackson, *Georgia Institute of Technology*, USA

WIP051 | An fNIR Based BMI for Letter Construction Using Continuous Control
Rudolph L. Mappus IV, Girish R. Venkatesh, Chetna Shastry, Amichai Israeli, Melody M. Jackson, *Georgia Institute of Technology*, USA

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Pranav Mistry, Pattie Maes, Liyan Chang, *Massachusetts Institute of Technology*, USA

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Omar Mubin, *Eindhoven University of Technology*, The Netherlands
Suleman Shahid, *Tilburg University*, The Netherlands
Christoph Bartneck, *Eindhoven University of Technology*, The Netherlands
Emiel Krahmer, Marc Swerts, *Tilburg University*, The Netherlands
Loe Feijs, *Eindhoven University of Technology*, The Netherlands

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Sean A. Munson, Daniel Xiaodan Zhou, Paul Resnick, *University of Michigan*, USA

WIP055 | Calibration-free Gaze Tracking Using a Binocular 3D Eye Model
Takashi Nagamatsu, Junzo Kamahara, Naoki Tanaka, *Kobe University*, Japan

WIP056 | Gesture-based Interaction with Virtual 3D Objects on Large Display - What Makes it Fun?
Jamie Ng, Tze-Jan Sim, Yao-Sheng Foo, Vanessa Yeo, *Institute for Infocomm Research*, Singapore

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Hugo Nicolau, Tiago Guerreiro, Joaquim A. Jorge, *INESC-ID*, Portugal

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Sonya Nikolova, Jordan Boyd-Graber, Perry R. Cook, *Princeton University*, USA

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Michael Nowak, Shailendra Rao, Clifford Nass,
Joel Lewenstein, Andrew Meyer, Jessica Richman, *Stanford University* USA

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William Odom, *Griffith University*, Australia
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Joshua Palay, *AOL*, USA
Mark W. Newman, *University of Michigan*, USA

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S. Camille Peres, Vickie Nguyen, *University of Houston*, USA
Philip T. Kortum, *Rice University*, USA
Magdy Akladios, *University of Houston*, USA
S. Bart Wood, *ExxonMobil Technical Computing Company*, USA
Andrew Muddimer, *Schlumberger Information Solutions*, USA

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Helen Petrie, *University of York*, UK
Chandra Harrison, *Flow Interactive*, UK

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Stephen Robertson, Milan Vojnovic, *Microsoft Research Cambridge*, UK
Ingmar Weber, *Ecole Polytechnique Fédérale de Lausanne*, Switzerland

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Johannes Schöning, *Institute for Geoinformatics*, Germany
Tom Bartindale, Patrick Olivier, Dan Jackson, *Newcastle University*, UK
Antonio Krüger, *Institute for Geoinformatics*, Germany
Jim Kitson, *Newcastle University*, UK

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Johannes Schöning, *Institute for Geoinformatics*, Germany
Michael Rohs, Sven Kratz, *Deutsche Telekom Laboratories*, Germany
Markus Löchtefeld, Antonio Krüger, *Institute for Geoinformatics*, Germany

WIP067 | Investigating Web Search Strategies and Forum Use to Support Diet and Weight Loss
mc schraefel, *University of Southampton*, UK
Ryen W. White, *Microsoft Research*, USA
Paul André, *University of Southampton*, UK
Desney S. Tan, *Microsoft Research*, USA

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Will Schroeder, *Principal Usability Specialist*, USA

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JinHa Seong, Woohun Lee, Youn-kyung Lim, *KAIST*, South Korea

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Suleman Shahid, Emiel Krahmer, Marc Swerts, *Tilburg University*, The Netherlands
Willem A. Melder, *TNO*, The Netherlands
Mark A. Neerincx, *Delft University of Technology/TNO*, The Netherlands

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Heesook Shin, *Electronics and Telecommunications Research Institute*, South Korea
Woohun Lee, *KAIST*, South Korea
Geehyuk Lee, *Information and Communications University*, South Korea
Ilyeon Cho, *Electronics and Telecommunications Research Institute*, South Korea

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Miyuki Shiraishi, Yasuyuki Washio, Chihiro Takayama, *Waseda University*, Japan
Vili Lehdonvirta, *Helsinki Institute for Information Technology*, Finland
Hiroaki Kimura, Tatsuo Nakajima, *Waseda University*, Japan

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Yedendra Babu Shrinivasan, *Eindhoven University of Technology*, The Netherlands
David Gotz, *IBM*, USA

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Ryan P. Spicer, Aisling Kelliher, *Arizona State University*, USA

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Adam J. Sporka, *University of Trento*, Italy
Jakub Franc, *Sun Microsystems Inc.*, Czech Rep
Giuseppe Riccardi, *University of Trento*, Italy

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Susan M. Stevens, Courtney C. Dornburg, *Sandia National Laboratories*, USA

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Abhay Sukumaran, *Stanford University*, USA
Satyan Ramlal, *University of Amsterdam*, The Netherlands
Eyal Ophir, *Stanford University*, USA
Vangala RamNaresh Kumar, Gaurav Mishra, *ICRISAT*, India
Vanessa Evers, *University of Amsterdam*, The Netherlands
Venkataraman Balaji, *ICRISAT*, India
Clifford Nass, *Stanford University*, USA

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Yuichiro Takeuchi, *Sony CSL*, Japan

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Andrea Taylor, Richard Wilson, Stefan Agamanolis, *Distance Lab Forres*, UK

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Robyn Taylor, Pierre Boulanger, *University of Alberta*, Canada
Patrick Olivier, Jayne Wallace, *Newcastle University*, UK

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Kazuhiro Terajima, Takashi Komuro, Masatoshi Ishikawa, *University of Tokyo*, Japan

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Peter Alexander Torpey, Elena Naomi Jessop, *Massachusetts Institute of Technology*, USA

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Masashi Tsuboi, Shinji Kimura, Tsutomu Horikoshi, *NTT DoCoMo, Inc.*, Japan

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Kaisa Väänänen-Vainio-Mattila, Minna Wäljas, *Tampere University of Technology*, Finland

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Teija Vainio, *Tampere University of Technology*, Finland

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Ravi K. Vatrapu, *Copenhagen Business School*, Denmark
Scott P. Robertson, *University of Hawaii*, USA

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Andrew Monk, *University of York*, UK

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Pamela Karr Wisniewski, Okan Pala, Heather Richter Lipford, David C. Wilson, *University of North Carolina*, USA

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Sungjoon Steve Won, Laura A. Dabbish, *Carnegie Mellon University*, USA

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Jong-Bum Woo, Youn-Kyung Lim, *KAIST*, South Korea

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Kota Yamaguchi, Takashi Komuro, Masatoshi Ishikawa, *University of Tokyo*, Japan

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Jason Zalinger, Nathan G. Freier, Eric Dutko, *Rensselaer Polytechnic Institute*, USA

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Nicolas Belloni, *Stockholm University*, Sweden
Lars Erik Holmquist, *Swedish Institute of Computer Science*, Sweden
Jakob Tholander, *Stockholm University*, Sweden

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Andrew Besmer, Heather Richter Lipford, *University of North Carolina*, USA

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Kora A. Bongen, Karrie G. Karahalios, *University of Illinois*, USA

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Jiajie Zhang, *University of Texas*, USA

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Gifford Cheung, Parmit K. Chilana, Shaun K. Kane, Braden Pellett, *University of Washington*, USA

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Paulo G. de Barros, Robert W. Lindeman, Timothy J. Loughlin, *Worcester Polytechnic Institute*, USA

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Sebastian Denef, Leonardo Ramirez, Tobias Dyrks, *Fraunhofer FIT*, Germany

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Jill P. Dimond, Sarita Yardi, Mark Guzdial, *Georgia Institute of Technology*, USA

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Tanja Doering, Steffi Beckhaus, Albrecht Schmidt, *University of Duisburg-Essen*, Germany

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Ian Douglas, *Florida State University*, USA

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Honglu Du, Mary Beth Rosson, John M. Carroll, Craig Ganoe, *Pennsylvania State University*, USA

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Hina Shah, *Georgia Institute of Technology*, USA
Thomas Erickson, Wendy A. Kellogg, *IBM T.J. Watson Research Center*, USA

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Kent Fenwick, Michael Massimi, Ronald M. Baecker, *University of Toronto*, Canada
Sandra Black, *Sunnybrook Health Sciences Centre*, Canada
Kevin Tonon, Cosmin Munteanu, *University of Toronto*, Canada
Elizabeth Rochon, *Toronto Rehab Institute*, Canada
David Ryan, *Sunnybrook Health Sciences Centre*, Canada

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Mirko Fetter, Tom Gross, *Bauhaus-University Weimar*, Germany

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Andre T. S. Fialho, Herjan van den Heuvel, Qonita Shahab, Qing Liu, Li Li, *Eindhoven University of Technology*, The Netherlands
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M. Funk, P.H.A. van der Putten, H. Corporaal, *Eindhoven University of Technology*, The Netherlands

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Jennifer Golbeck, *University of Maryland*, USA

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Mona Haraty, Syavash Nobarany, Steve DiPaola, Brian Fisher, *Simon Fraser University*, Canada

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Ken-ichiro Iwasaki, Takashi Miyaki, Jun Rekimoto, *University of Tokyo*, Japan

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Ricardo Jota, João M. Pereira, Joaquim A. Jorge, *Inesc-ID*, Portugal

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Nivedita R. Kadaba, *University of Manitoba*, Canada
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Shaun K. Kane, Predrag Klasnja, *University of Washington*, USA

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Rilla Khaled, Pippin Barr, Hannah Johnston, Robert Biddle, *Carleton University*, Canada

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Taemie J. Kim, *Massachusetts Institute of Technology*, USA
Oliver Brdiczka, Maurice Chu, James Begole, *Palo Alto Research Center*, USA

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Tanyoung Kim, Hwajung Hong, Brian Magerko, *Georgia Institute of Technology*, USA

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Aylin Koca, Evangelos Karapanos, Aarnout Brombacher, *Eindhoven University of Technology*, The Netherlands

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Werner A. König, Jens Gerken, Stefan Dierdorf, Harald Reiterer, *University of Konstanz*, Germany

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Werner A. König, Roman Rädle, Harald Reiterer, *University of Konstanz*, Germany

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Elsa Kosmack Vaara, Kristina Höök, *SICS*, Sweden
Jakob Tholander, Sweden

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Ranjitha Kumar, Juho Kim, Scott R. Klemmer, *Stanford University*, USA

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Marco Lazzari, Marco Chiodi, *University of Bergamo*, Italy

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Boram Lee, Woohun Lee, *KAIST*, South Korea

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Bonnie MacKay, Carolyn Watters, *Dalhousie University*, Canada

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Vince Mancuso, *Pennsylvania State University*, USA

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Pooja Mathur, Karrie G. Karahalios, *University of Illinois*, USA

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Pooja Mathur, Karrie G. Karahalios, *University of Illinois*, USA

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David C. McCallum, Edward Mak, Pourang P. Irani, *University of Manitoba*, Canada
Sriram Subramanian, *University of Bristol*, UK

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Troy L. McDaniel, Sreekar Krishna, Dirk Colbry,
Sethuraman Panchanathan, *Arizona State University*, USA

WIP149 | "It's Like a Circus in Here!" Affect and Information Sharing in an Emergency Department
Helena M. Mentis, Mary Beth Rosson, *Pennsylvania State University*, USA

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WIP151 | ADAPT: Audience Design of Ambient Persuasive Technology
Timothy M. Miller, Patrick Rich, Janet Davis, *Grinnell College*, USA

WIP152 | Single Stroke Gaze Gestures
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John Paulin Hansen, *University of Copenhagen*, Denmark
Martin Lillholm, *University College London*, UK
Alastair G. Gale, *Loughborough University*, UK

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Max Möllers, Jonathan Diehl, *RWTH Aachen University*, Germany
Markus Jordans, *P3-Solutions GmbH*, Germany
Jan Borchers, *RWTH Aachen University*, Germany

WIP154 | Towards Intelligent Authoring Tools for Machinima Creation
Brian O'Neill, Mark O. Riedl, Michael Nitsche, *Georgia Institute of Technology*, USA

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Grant A. Partridge, Pourang P. Irani, *University of Manitoba*, Canada

WIP156 | Material Awareness: Promoting Reflection on Everyday Materiality
James Pierce, *Indiana University*, USA

WIP157 | Towards Improving Mental Models of Personal Firewall Users
Fahimeh Raja, Kirstie Hawkey, Konstantin Beznosov, *University of British Columbia*, Canada

WIP158 | Warp Speed Design – a Rapid Design Method for use with Children
Janet C. Read, *University of Central Lancashire*, UK

WIP159 | Device Ecology Mapper: A Tool for Studying Users' Ecosystems of Interactive Artifacts
William Ryan, Erik Stolterman, Heekyoung Jung, Martin Siegel,
Tonya Thompson, William R. Hazlewood, *Indiana University*, USA

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Kimiko Ryokai, Michael Jongseon Lee, Jonathan Micah Breitbart, *University of California, Berkeley*, USA

WIP161 | Tangible Message Bubbles for Children's Communication and Play
Kimiko Ryokai, *University of California, Berkeley*, USA
Hayes S. Raffle, *Nokia Research Center*, USA
Andy Brooks, *University of California, Berkeley*, USA

WIP162 | Asynchronous Gameplay in Pervasive Multiplayer Mobile Games
Hannamari Saarenpää, *University of Tampere*, Finland
Hannu Korhonen, *Nokia Research Center*, Finland
Janne Paavilainen, *University of Tampere*, Finland

WIP163 | Rhythms of Non-use of Device Ensembles
Nithya Sambasivan, *University of California*, USA
Leena Ventä, Jani Mäntyjärvi, Minna Isomursu, Jonna Häkkilä, *Nokia Research Center*, Finland

WIP164 | Low-Cost Gaze Interaction: Ready to Deliver the Promises
Javier San Agustin, Henrik Skovsgaard, John Paulin Hansen,
Dan Witzner Hansen, *University of Copenhagen*, Denmark

WIP165 | Understanding Teamwork in High-Risk Domains Through Analysis of Errors
Aleksandra Sarcevic, *Rutgers University*, USA

WIP166 | Emotional Experience on Facebook Site
Corina Sas, Alan Dix, Jennefer Hart, Ronghui Su, *Lancaster University*, UK

WIP167 | Using Hands and Feet to Navigate and Manipulate Spatial Data
Johannes Schöning, Florian Daiber, Antonio Krüger, *Institute for Geoinformatics*, Germany
Michael Rohs, *Deutsche Telekom Laboratories*, Germany

WIP168 | Time Sequences
Ross Shannon, Aaron Quigley, Paddy Nixon, *UCD Dublin*, Ireland

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Erh-li Early Shen, Sung-sheng Daniel Tsai, Hao-hua Chu, Yung-jen Jane Hsu, Chi-wen Euro Chen, *National Taiwan University*, Taiwan

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Mara G. Silva, Doug A. Bowman, *Virginia Tech*, USA

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Dustin Arthur Smith, Henry Lieberman, *Massachusetts Institute of Technology*, USA

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Timothy Sohn, Raphael Ballagas, *Nokia Research Center*, USA
Leila Takayama, *Willow Garage*, USA

WIP173 | Auditory Priming for Upcoming Events
Timothy Sohn, *Nokia Research Center*, USA
Leila Takayama, *Willow Garage*, USA
Dean Eckles, Rafael Ballagas, *Nokia Research Center*, USA

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Minyoung Song, Chris Quintana, *University of Michigan*, USA

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Jeffrey Stylos, Zizhuang Yang, Brad A. Myers, *Carnegie Mellon University*, USA

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S. Shyam Sundar, Qian Xu, Anne Oeldorf-Hirsch, *Pennsylvania State University*, USA

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Martin Tall, *University of Copenhagen*, Denmark
Alexandre Alapetite, *Technical University of Denmark*, Denmark
Javier San Agustin, Henrik Skovsgaard, John Paulin Hansen, Dan Witzner Hansen, *University of Copenhagen*, Denmark
Emilie Møllenbach, *Loughborough University*, UK

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Tom Tullis, Marisa Siegel, *Fidelity Investments*, USA
Emily Sun, *Swarthmore College*, USA

WIP181 | You Scratch My Back and I'll Scratch Yours: Combating Email Overload Collaboratively
Manas Tungare, Manuel A. Pérez-Quiñones, *Virginia Tech*, USA

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Anna Vallgårda, Tomas Sokoler, *University of Copenhagen*, Denmark

WIP183 | Cost-effective Wearable Sensor to Detect EMF
Cati Vaucelle, Hiroshi Ishii, Joseph A. Paradiso, *Massachusetts Institute of Technology*, USA

WIP184 | Breaking Down Brick Walls: Design, Construction, and Prototype Fabrication Knowledge in Architecture
Rachelle Villalon, Henry Lieberman, Larry Sass, *Massachusetts Institute of Technology*, USA

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Greg Walsh, *University of Maryland*, USA

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Qihua Wang, *Purdue University*, USA
Hongxia Jin, *IBM Almaden Research Center*, USA

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Xing-Dong Yang, *University of Alberta*, Canada
Pourang P. Irani, *University of Manitoba*, Canada
Pierre Boulanger, Walter Bischof, *University of Alberta*, Canada

WIP188 | Aesthetics Matter: Leveraging Design Heuristics to Synthesize Visually Satisfying Handheld Interfaces
Yeonsoo Yang, Scott R. Klemmer, *Stanford University*, USA

WIP189 | A Tool to Study Affective Touch:: Goals & Design of the Haptic Creature
Steve Yohanan, Karon E. MacLean, *University of British Columbia*, Canada

WIP190 | Investigating the Impact of a Minimalist In-Home Energy Consumption Display
Tae-Jung Yun, *Georgia Institute of Technology*, USA

WIP191 | Web-Active Users Working with Data
Nan Zang, Mary Beth Rosson, *Pennsylvania State University*, USA

WIP192 | An Evaluation of One-handed Techniques for Multiple-target Selection
Hong Zhang, Tyler J. Gunn, Ed Mak, Pourang P. Irani, *University of Manitoba*, Canada

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Booth 34

Realize your ideas. Autodesk is the world leader in 2D and 3D design software with the broadest portfolio of manufacturing, geospatial building & construction, and media & entertainment solutions. Stop by our booth to meet members of our User Experience team and learn more.

Bentley University
Booth 8

The Master of Science in Human Factors in Information Design at Bentley University is an innovative program that combines field research and product design with a keen understanding of human behavior to improve the quality of the user experience.

Bestica, Inc. (Recruiting)
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BostonCHI
Booth 29

BostonCHI, CHI's first local chapter, is an active research and design community bringing together and supporting HCI professionals in the Boston area and beyond. Visit our booth and pick up a free tattoo, luggage tag, or Insider's Guide to Boston.

Circle Twelve
Booth 36

Circle Twelve is the exclusive source for the DiamondTouch table - the world's first multi-user touch technology. While Circle Twelve is a new company, it builds on a deep history of technology in the field of tabletop computing initially developed at MERL.

Eurotech Group
Booth 9

Eurotech presents Zypad wearable computers which enable hands free operations establishing a unique interaction with the user. Zypad wireless capabilities allow users to carry out non-computer tasks across a variety of professional work applications.

Google (Champion Sponsor)
Booth 1

Around our offices, we have a saying: Focus on the user and all else will follow. For us, it's as simple as that. And for our users, we want to make it even more simple. That can be a challenge, but we're up to it. Come by our booth to meet our great engineers and see some of our exciting new demos.

INVIVIA, Inc.
Booth 31

INVIVIA is an award winning design firm. We create innovative products, ideas and spaces to inspire, amuse and delight our clients. Clients include: Microsoft, HP, Medtronic, DARPA, American Museum of Natural History, LG, Genzyme and others. http://www.INVIVIA.com

John Wiley & Sons, Ltd.
Booth 28

As a publisher, Wiley is proud to offer comprehensive coverage of the most current topics in Human-Computer Interaction today. Stop by our stand for the first exclusive look at the forthcoming new edition of our global bestseller, Interaction Design, by Sharp, Preece and Rogers.

LC Technologies, Inc.
Booth 39

A range of eye tracking technologies: The EyeFollower that provides automatic eye acquisition, binocular tracking, and 0.45-degree gazepoint tracking accuracy throughout 20x12x15 inch volume. Also, an inexpensive plug-and-play system and state-of-the art NYAN analysis software.

Mad*Pow
Booth 27

Mad*Pow is an experienced design agency that partners with industry leaders to create intuitive websites, internal systems, applications and interactive media. Our approach focuses on understanding user and customer needs, and combines the art of digital design with the science of human factors to achieve business results.

Microsoft Corp. (Champion Sponsor, Recruiting)
Booth 43 & 44

At Microsoft, we're motivated and inspired every day by how our customers use our software to find creative solutions to business problems, develop breakthrough ideas, and stay connected to what's most important to them.

MIT Press
Booth 38

The MIT Press publishes new and classic titles in human-computer interaction, design and new media including Graham Pullin's Design Meets Disability. Please come by our booth to browse our new and classic titles and purchase books at 30% discount.

Morgan & Claypool Publishers
Booth 42

Morgan & Claypool Publishers presents Synthesis, an innovative information service for the research, development, and educational community in computer and information science. The exhibit includes new publications in our HCI and our Information series, and demonstration of the digital library.

Morgan Kaufmann
Booth 24

Morgan Kaufmann publishes stellar HCI books focusing on usability, prototyping, and sketching, and more. Popular titles include Sketching User Experiences and Letting Go of the Words. For more information on our books visit www.elsevier.com/hci.

Noldus Information Technology
Booth 6

Noldus offers a wide variety of solutions for the observation, visualization & analysis of human behavior. Our products include The Observer, our advanced event logging tool, and FaceReader, the revolutionary new system for facial expression analysis.

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now publishers presents FOUNDATIONS AND TRENDS, a gateway to the primary research literature in HCI, combining the peer-review of journals, the high usage of reference works, and the pedagogy of textbooks. Up to 70% discount on selected titles.

Oracle (Recruiting)
Booth 40

Oracle is the world leader in enterprise-class user experiences. Come and see how our team of interaction design, usability engineering, ethnography, and cognitive engineering research professionals help make our customers more productive, everyday.

Ovo Studios, LLC
Booth 11

Ovo Studios builds and sells fixed and portable usability labs. We develop Ovo Logger, the industry-standard for observational logging and analysis. We are a turnkey solutions provider, and have been providing quality products/services for 10 years.

Pearson
Booth 30

Addison-Wesley and Prentice Hall, imprints of Pearson Education, are proud to introduce the 5th edition of Designing the User Interface, Strategies for Effective Human-Computer Interaction by Shneiderman/ Plaisant. Come by to check it out!

Polhemus
Booth 25

Polhemus has been providing Motion Tracking technology since 1970. Our 6DOF trackers are used in biomechanics, virtual reality and human computer interface research. We also offer VisionTrak from ISCAN, the world's most advanced eye tracking technology.

Samsung Electronics Co., LTD
Booth 12

The Future Experience Part of Samsung Electronics presents its recent research results related to user experience and new interaction developments.

Seeing Machines
Booth 7

Seeing Machines, a provider of vision-based human machine interfaces, presents the latest version of our award winning product, faceLAB™5. A valuable development tool, faceLAB provides gaze, head, eyelid, and, in faceLAB5, lip and eyebrow tracking.

SensoMotoric Instruments
Booth 41

SMI is a leading provider of eye and gaze tracking systems worldwide. Our advanced analysis software provides visualizations and charts that simplify the interpretation of eye tracking data. Let us show you how easily you can add an eye tracker to your existing set of usability tools: www.smivision.com.

Smart Eye AB
Booth 5

Smart Eye AB was founded to provide the market with a real-time and completely non-invasive eye, eyelid and head tracking technology for a wide range of situations.

Springer
Booth 3

Take your research and skills to the next level with Springer Computer and Information Science. Stop by our booth to discover an authoritative range of journals, books, and major reference works, including the highly respected Lecture Notes in Computer Science and Encyclopedias, offering easy-access to important applications, concepts, and technology.

Taylor & Francis
Booth 10

With over 200 years publishing experience, international offices and over 1100 titles in print, Taylor & Francis is a world leading publisher of academic journals. All Taylor & Francis journals have their own web pages with full information - visit www.tandf.co.uk/journals/ for a closer look.

TechSmith Corporation
Booth 4

TechSmith provides usability testing software when and how you need it. Conduct everything from usability testing to focus groups and in-depth interviews with Morae. Perform remote usability testing with UserVue. Free trials and demos at our booth!

Tobii Technology, Inc.
Booth 32 & 33

Tobii Technology is the world leader in eye tracking for usability and market research applications. Tobii allows you to know where participants are looking in real-time and aggregate the data of multiple participants. Don't guess or count on participants to tell you what they think - know it with Tobii eye tracking!

UXalliance
Booth 35

Founded in 2005, the UXalliance is the international network for user experience. The UXalliance consists of fourteen partners who function as a single point of contact to facilitate research, testing & design requests in over 40 countries worldwide.

UserZoom
Booth 2

UserZoom is an international online market research company, specializing in web customer experience and usability testing software products and services, that help companies keep customers happy, increase online revenues and maximize conversion rates.


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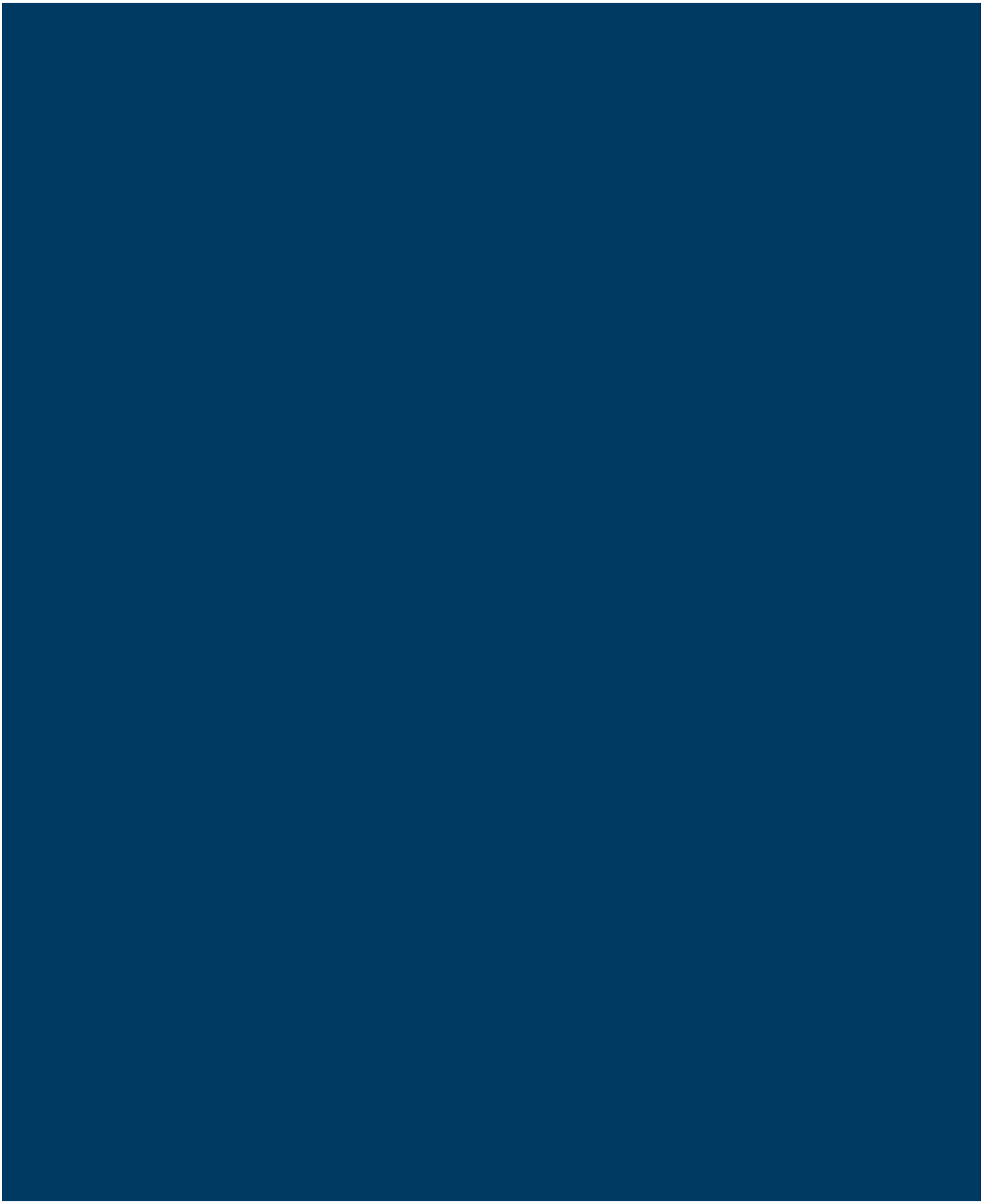

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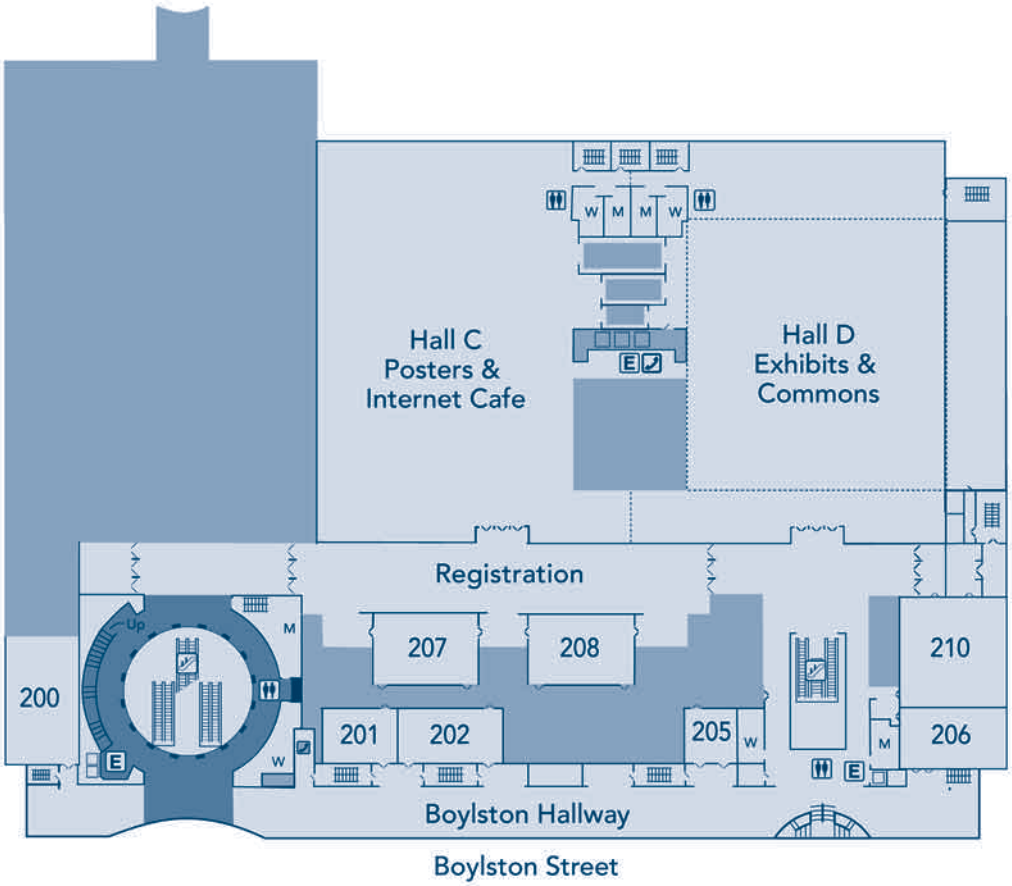
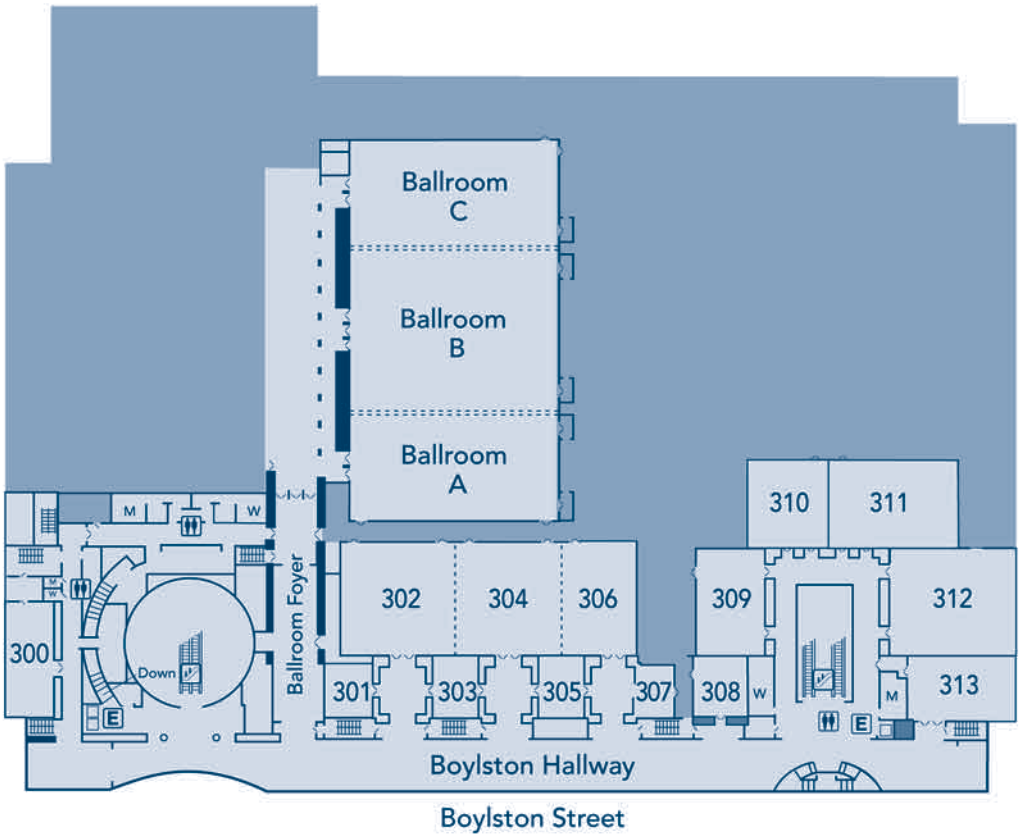


Hynes Convention Center, Level 3



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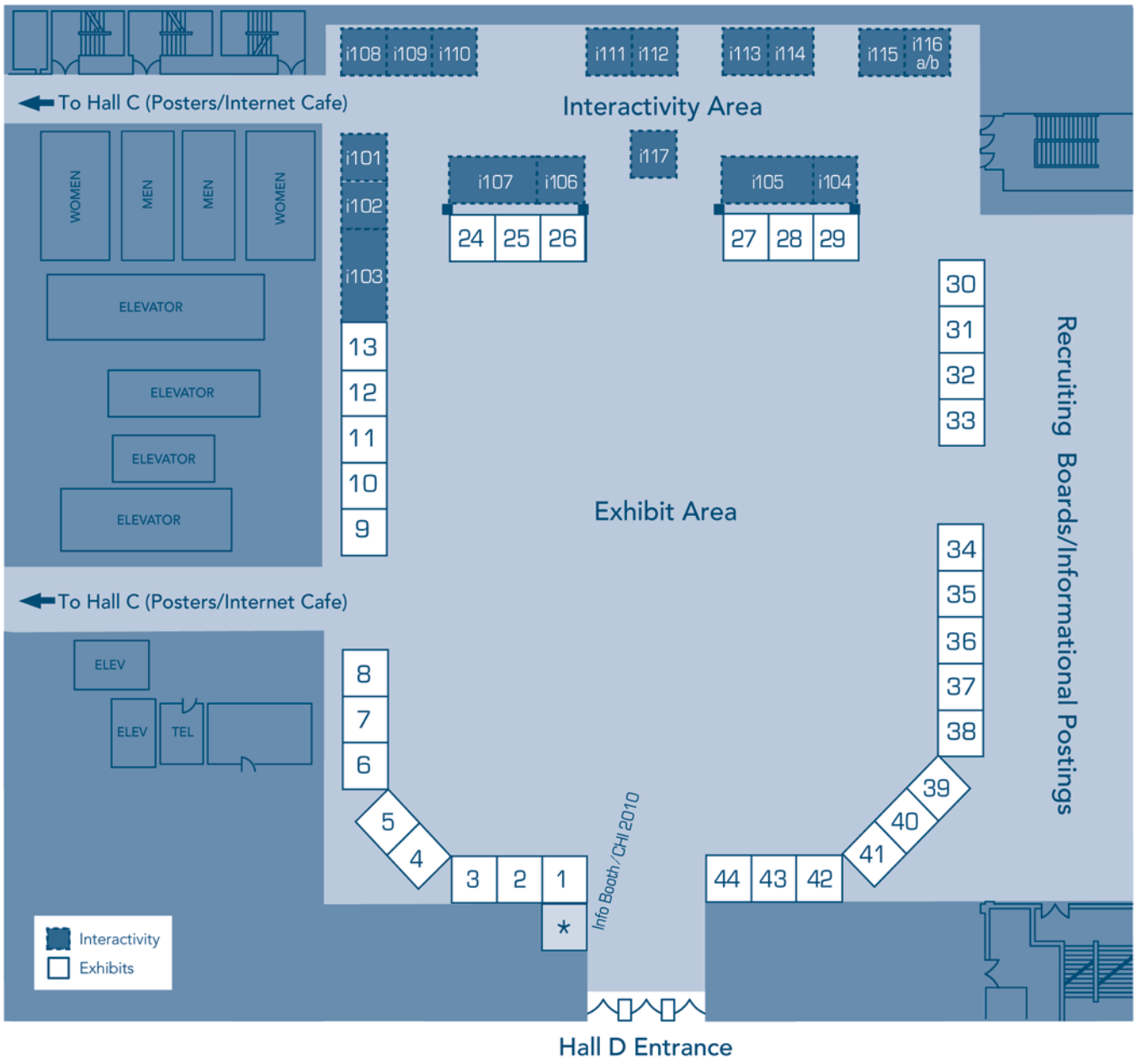


Interactivity Booths

i101 Graspables: Grasp-Recognition as a User Interface **(Invited)**

i102 Nano Touch: Back-of-device Interaction allows creating very small touch devices **(Invited)**

i103 IMPAD - An Inexpensive Multitouch Pressure Aquisition Device

i104 Wearable EOG Goggles: Eye-Based Interaction in Everyday Environments

i105 The Mousegrip

i106 TypeRight: a Keyboard with Tactile Error Prevention **(Invited)**

i107 Aurally and visually enhanced audio search with SoundTorch

i108 Low-Cost Gaze-Pointing and EMG-Clicking

i109 A Hand Clap Interface for Sonic Interaction with the Computer

i110 Tactful Calling: Urgency-Augmented Phone Calls through High-Resolution Pressure Input on Mobile Phones

i111 CaraClock: An Interactive Photo Viewer Designed for Family Memories

i112 Tangible Sketching in 3D with Posey

i113 An education-friendly construction platform for wearable computing

i114 Natural Throw and Tilt Interaction between Mobile Phones and Distant Displays

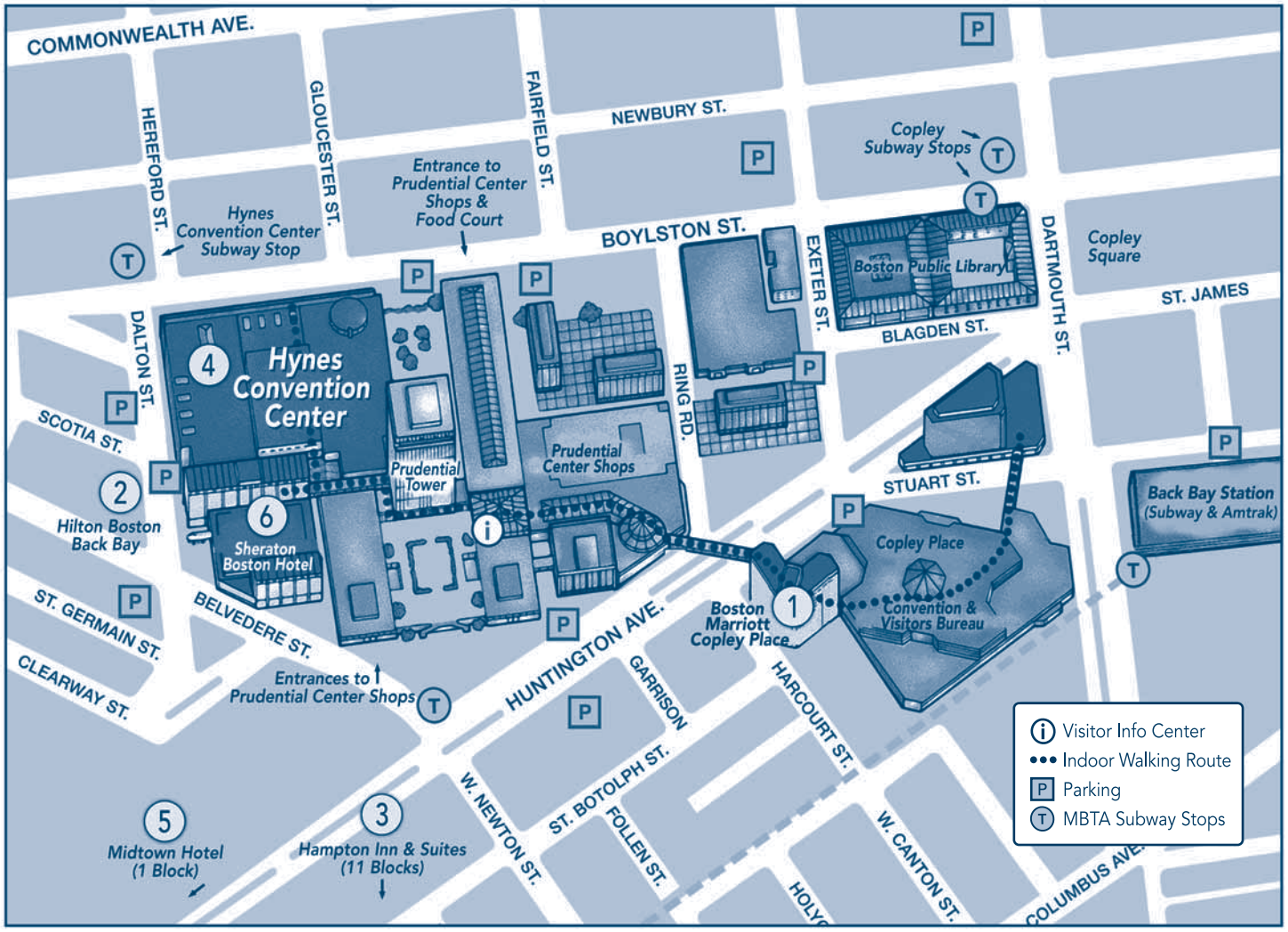
i115 "Hiya-Atsu" media: Augmenting digital media with temperature

i116a Occlusion-Aware Menu Design for Digital Tabletops

i116b FLUX, a tilting multi-touch and pen-based surface

i117 SLAP Widgets: Bridging the Gap Between Virtual and Physical Controls on Tabletops

Boston Downtown



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