CHI 2011

CONFERENCE PROGRAM

The 29th CHI Conference on
Human Factors in Computing Systems

CONNECTING → VANCOUVER, BC, CANADA

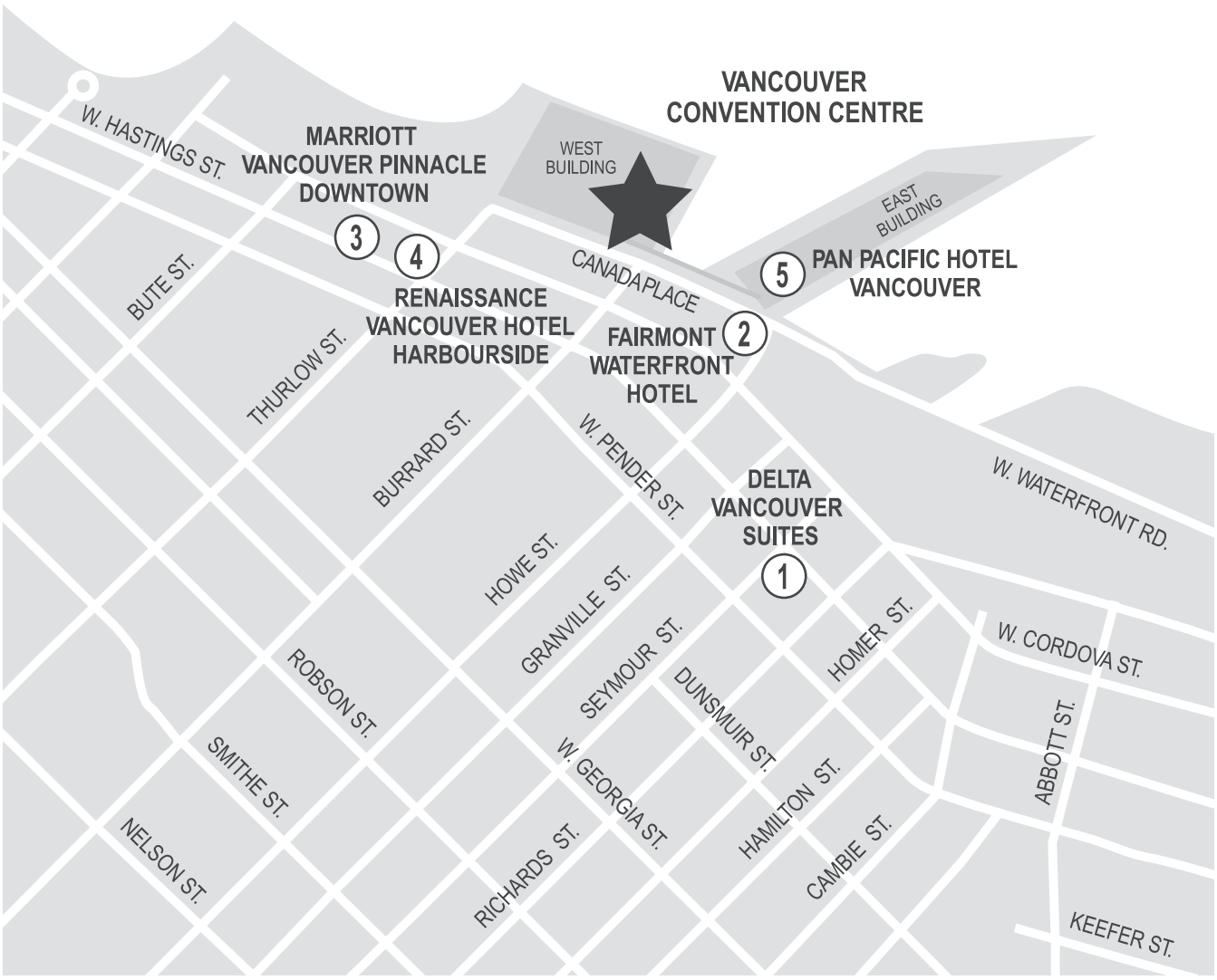
MAY 7–12, 2011

WWW.CHI2011.ORG

Association for Computing Machinery

SIGCHI
special interest group computer human interaction

Vancouver Convention Centre and Hotel Accomodations



1 Delta Vancouver Suites
550 West Hastings Street, Vancouver BC
+1 (604) 689-8188

2 Fairmont Waterfront Hotel
900 Canada Place Way, Vancouver BC
+1 (604) 691-1991

3 Marriott Vancouver Pinnacle Downtown
1128 West Hastings Street, Vancouver BC
+1 (604) 684-1128

4 Renaissance Vancouver Hotel Harbourside
1133 West Hastings Street, Vancouver BC
+1 (604) 689-9211

5 Pan Pacific Hotel Vancouver
300-999 Canada Place, Vancouver BC
+1 (604) 662-8111

See Inside for CHI 2011 Conference-At-A-Glance

MONDAY | COURSES

Design and Analysis of Large Scale Log Studies

11:00 - 17:20 | 114/115
INSTRUCTORS:
Susan Dumais, *Microsoft Research*
Robin Jeffries, Daniel Russell, Diane Tang, *Google*
Jaime Teevan, *Microsoft Research*

HCI History: Trajectories into the Future

11:00 - 12:20 | 116/117
INSTRUCTORS:
Jonathan Grudin, *Microsoft Research*

Empirical Research Methods for Human-Computer Interaction

11:00 - 15:20 | 118
INSTRUCTORS:
Scott MacKenzie, *York University*

Storyboarding for Designers and Design Researchers

11:00 - 15:20 | 121/122
INSTRUCTORS:
Pieter Jan Stappers, Froukje Sleeswijk Visser, Corrie van der Lelie, *Delft University of Technology*

Human-Computer Interaction: Introduction and Overview

14:00 - 17:20 | 116/117
INSTRUCTORS:
Keith Butler, *University of Washington*
Robert Jacob, *Tufts University*
David Kieras, *University of Michigan*

Evaluating Children's Interactive Technology

16:00 - 17:20 | 118
INSTRUCTORS:
Janet Read, *University of Central Lancashire*
Panos Markopoulos, *Technical University of Eindhoven*

Looking Below the Surface: Understanding and Analyzing Interaction Design

16:00 - 17:20 | 121/122
INSTRUCTORS:
Karen Holtzblatt, David Rondeau, *InContext Design*

TUESDAY | COURSES

Agile User Experience and UCD

09:00 - 17:20 | 114+115
INSTRUCTORS:
William Hudson, *Syntagm Ltd*

Beyond Anecdotes: Analyzing Data from Field Studies

09:00 - 17:20 | 116/117
INSTRUCTORS:
David Siegel, *Dray & Associates, Inc.*

Practical Statistics for User Research Part I

09:00 - 12:20 | 118
INSTRUCTORS:
Jeff Sauro, *Oracle, Measuring Usability LLC*
Jim Lewis, *IBM*

Research through Design: The Logic of Learning by Making

11:00 - 12:20 | 119/120
INSTRUCTORS:
William Gaver, *Goldsmiths College*

What Makes Things Cool? Principles for Design

11:00 - 12:20 | 121/122
INSTRUCTORS:
Karen Holtzblatt, *InContext Design*

Well, We've Done All This Research, Now What?

14:00 - 17:20 | 118
INSTRUCTORS:
Steve Portigal, *Portigal Consulting*

Research Through Design: Method for HCI Research

14:00 - 15:20 | 119/120
INSTRUCTORS:
John Zimmerman, *Carnegie Mellon University*
Jodi Forlizzi, *Carnegie Mellon University*

Inspiring Mobile Interaction Design

14:00 - 17:20 | 121/122
INSTRUCTORS:
Matt Jones, *Swansea University*
Gary Marsden, *Universtity of Cape Town*

Hands-free Interfaces: The Myths, Challenges, and Opportunities of Speech-based Interaction

16:00 - 17:20 | 119/120
INSTRUCTORS:
Cosmin Munteanu, *National Research Council Canada*
Gerald Penn, *University of Toronto*

WEDNESDAY | COURSES

Understanding Users in Context: Fieldwork in User-Centered Design

09:00 - 17:20 | 114/115
INSTRUCTORS:
Susan Dray, David Siegel, *Dray & Associates, Inc.*

Interaction Design for Development

09:00 - 12:20 | 116/117
INSTRUCTORS:
Gary Marsden, *University of Cape Town*
Matt Jones, *University of Swansea*

Leading Innovation Workshops: Driving the Strategic Dialog to Align Stakeholders Around Breakthrough Ideas

09:00 - 15:20 | 118
INSTRUCTORS:
Jim Nieters, *Yahoo!*
Gesche Joost, *Deutsche Telekom Laboratories*
Eric Bollman, *Yahoo!*

Designing Social TV and Social Communications for the Home

09:00 - 12:20 | 119/120
INSTRUCTORS:
David Geerts, *Katholieke Universiteit Leuven, IBBT*
Pablo Cesar, *CWI*

Choice and Decision Making for HCI

09:00 - 12:20 | 121/122
INSTRUCTORS:
Anthony Jameson, *German Research Institute for Artificial Intelligence (DFKI)*

Inspiring Mobile Interaction Design

14:00 - 17:20 | 118
INSTRUCTORS:
Matt Jones, *Swansea University*
Gary Marsden, *Universtity of Cape Town*

Practical Statistics for User Research Part II

14:00 - 17:20 | 119/120
INSTRUCTORS:
Jeff Sauro, *Oracle, Measuring Usability LLC*
Jim Lewis, *IBM*

Designing What to Design: A Task-Focused Conceptual Model

14:00 - 17:20 | 121/122
INSTRUCTORS:
Jeff Johnson, *UI Wizards, Inc.*

The Role of the UX Professional on an Agile Team

16:00 - 17:20 | 118
INSTRUCTORS:
Karen Holtzblatt, Hugh Beyer, *InContext Design*

THURSDAY | COURSES

Card Sorting for Navigation Design

09:00 - 12:20 | 114/115
INSTRUCTORS:
William Hudson, *Syntagm Ltd*

Cognitive Crash Dummies: Predicting Performance from Early Prototypes

09:00 - 12:20 | 116/117
INSTRUCTORS:
Bonnie John, *Carnegie Mellon University, IBM T.J. Watson Research Center, USA*

New Methods for Designing for and with the iChild: Strategies for Today's Mobile, Social, and Internet Technologies

09:00 - 15:20 | 118
INSTRUCTORS:
Allison Druin, *University of Maryland*
Jerry Fails, *Montclair State University*
Mona Leigh Guha, *University of Maryland*

How to Conduct International Ethnographic Research with Mobile Users: From Start To Finish

09:00 - 12:20 | 121/122
INSTRUCTORS:
Anthony Sampanes, *Cisco Systems Inc.*
Michele Snyder, *Oracle Corporation*

Label Placement in Forms and Other Time-consuming Forms Controversies

14:00 - 15:20 | 114/115
INSTRUCTORS:
Caroline Jarrett, *Effortmark Ltd*

Experiencing Agile Usability: Breaking through the 'Us vs Them' Problem

14:00 - 15:20 | 116/117
INSTRUCTORS:
Jason Lee, *Meridium, Inc.*
Scott McCrickard, *Virginia Tech*

Selecting UCD Methods that Maximize Benefits and Minimize Project Risks

14:00 - 15:20 | 121/122
INSTRUCTORS:
Nigel Bevan, *Professional Usability Services*
Xavier Ferre, *Universidad Politecnica de Madrid*

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8:45–10:30	Opening Plenary Howard Rheingold – My Explorations of Social Media and Social Media Literacies in Teaching & Learning (Followed by CHI Madness)							
MONDAY	11:00–12:20	Invited Talk An Informal Walk Through 35 Years of Interactive Devices	Invited Panel Sustainability Community Challenges Ahead	alt.chi Emotions, Ethics, and Civics	Technical Presentations Health 1: Technology Challenges	Technical Presentations Telepresence	SIG Engineering Automation in Interactive Critical Systems	Technical Presentations Olfaction, Breath & Biofeedback
	14:00–15:20	Panel World of Warcraft as a Global Artifact	SIG UX Research	Technical Presentations Watching Together	Technical Presentations Health 2: Persuasive Systems	Technical Presentations Brain & Bio-sensor Interactions	SIG Touching the 3rd Dimension	Technical Presentations Gestures
	16:00–17:20	Invited Panel Designing for UX: Academia & Industry	SIG Standards and Policy	alt.chi Playing Well with Others	Technical Presentations Health 3: Online Communities & Social Interaction	Technical Presentations Human-Robot Interaction	SIG The Future of Natural UI	Technical Presentations Tagging
8:00–8:45	CHI Madness							
TUESDAY	09:00–10:00	Panel UX Management Post Mergers and Acquisitions	SIG Designing for Whole Systems and Services in Healthcare		Technical Presentations Ambient & Peripheral Computing	Technical Presentations Museums & Public Exhibitions	Invited SIG Sustainability Community	Technical Presentations Everyday Information Management
	11:00–12:20-	Festschrift Panel in Honor of Stuart K. Card	Panel Facebook for Health		Technical Presentations Non-flat Displays	Technical Presentations Design Theory	Invited SIG Games and Entertainment at CHI	Technical Presentations Microblogging Behavior
	14:00–15:20	Panel Re-engineering Health Care with Information Technology	SIG Geographic HCI		Technical Presentations Flexible Grips & Gestures	Technical Presentations 3D Interaction		Technical Presentations Crowdsourcing
	16:00–17:20	Panel RepliCHI – Should CHI be Replicating Research...	SIG Applying the NSF Broader Impacts Criteria to HCI Research		Technical Presentations Multi-touch	Technical Presentations Pointing 2: Fitts Law	Invited SIG CHI Design Community	Technical Presentations Evaluation and/or Design Based on Many Users
8:00–8:45	CHI Madness							
WEDNESDAY	09:00–10:00	Invited Panel Managing Global UX Teams	SIG Interactions magazine		Technical Presentations Collaboration & Creativity	Technical Presentations Wireless Networks	SIG Interactive Technologies for Health	Technical Presentations Storytelling & Perceptual Crossing
	11:00–12:20	Panel HCI for Peace: From Idealism to Concrete Steps	Invited SIG Digital Arts and Interaction		Technical Presentations Touch 1: Tactile & Haptics	Technical Presentations Security (Systems)	SIG Engineering Community the Role of Engineering Work in CHI	Technical Presentations Home Automation
	14:00–15:20	Panel Transferability of Research Findings	SIG Child Computer Interaction		Technical Presentations Decision Making & the Web	Technical Presentations Security (Social)		Technical Presentations Games
	16:00–17:20	Invited Panel The Future of Child-Computer Interaction	SIG Communities		Technical Presentations Touch 3: Sensing	Technical Presentations Authentication	SIG User Experience Community	Technical Presentations Cats, Dogs, Sports, Games & Books
8:15–8:45	CHI Madness							
THURSDAY	9:00–10:00	Panel Increasing Legal Requirements for Interface Accessibility	Social Impact Award Alan Newell	Invited Panel Games and HCI		Technical Presentations Tabletop Synchronous Collaboration	SIG Using Eye Tracking for Interaction	Technical Presentations Social Q & A
	11:00–12:20	Panel Quality Control, on the Critique and Criticism of Design Research	SIG Participatory Culture in the Age of Social Media	Student Research Competition Finalists Presentations	Technical Presentations Reading & Writing	Technical Presentations Engaging Youth	SIG Managing UX teams	Technical Presentations Tangibles
	14:00–15:20		SIG Accessible Games	Student Design Competition Finalists Presentations	Technical Presentations Books & Language	Technical Presentations Privacy	SIG Designing for the UX of Sociability in MMO Games	Technical Presentations Tactile Interaction
16:00–17:20	Closing Plenary Ethan Zuckerman – Desperately Seeking Serendipity							

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8:45–10:30	Opening Plenary Howard Rheingold – My Explorations of Social Media... (Followed by CHI Madness)					
MONDAY	11:00–12:20	Technical Presentations Research Methods	Technical Presentations Machine Learning	Technical Presentations Mid-air Pointing & Gestures	Technical Presentations Twitter Systems	Technical Presentations Sex & Bodies
	14:00–15:20	Technical Presentations Designing for Values, Democracy & Peace	Technical Presentations Driving	Technical Presentations Meetings & Interaction Spaces	Technical Presentations Art, Music & Movement	Technical Presentations Facebook
	16:00–17:20	Technical Presentations HCI for All	Technical Presentations Emotional States	Technical Presentations Identity & Virtual Social Interactions	Technical Presentations Gestures, Body & Touch	Technical Presentations Pointing 1
8:00–8:45	CHI Madness					
TUESDAY	9:00–10:00	Technical Presentations Low-cost ICT4D	Technical Presentations Predicting & Modeling Human Behaviors	Technical Presentations Death & Bereavement	Lifetime Research Award Terry Winograd	alt.chi ...and I just Can't Take it Anymore!
	11:00–12:20	Technical Presentations Inter-cultural Interaction	Technical Presentations Eye Tracking	Technical Presentations Families	Technical Presentations Search & Information Seeking	Technical Presentations Expression & Perception
	14:00–15:20	Technical Presentations User Studies/ Ethnography in Developing Regions	Technical Presentations Visualization and Perception	Technical Presentations Digital Content & Collections	Technical Presentations Search & Stuff	Technical Presentations Design Materiality
	16:00–17:20	Technical Presentations Homeless Users	Technical Presentations Visual Analytics	Technical Presentations Photo Sharing	Technical Presentations Web Search & Usability	Technical Presentations Performing Arts
8:00–8:45	CHI Madness					
WEDNESDAY	9:00–10:00	alt.chi Look! Up in the sky!	Technical Presentations Emergency Response & Scheduling	Technical Presentations Learning	Lifetime Practice Award Larry Tesler	Technical Presentations Time/Animations
	11:00–12:10	Technical Presentations Sustainability 1	Technical Presentations Mobile Issues	Technical Presentations Website & Application Design	Technical Presentations New Approaches to Usability	Technical Presentations Design Methods
	14:00–15:20	Technical Presentations Sustainability 2	Technical Presentations Location Sharing	Technical Presentations Text Entry & Typing	Technical Presentations Touch 2: Tactile & Targets	Technical Presentations Methods to Aid & Structure Design
	16:00–17:20	Technical Presentations User Experience	Technical Presentations Interaction on Mobile Devices	Technical Presentations Shortcuts Commands & Expertise	Technical Presentations Sound Interactions	Technical Presentations Innovation & Design
8:15–8:45	CHI Madness					
THURSDAY	9:00–10:00	alt.chi Is There a Designer in the House?		Technical Presentations Empowering Users in Developing Regions	Social Impact Award Clayton Lewis	Technical Presentations Organizations & Distributed Work
	11:00–12:20	Technical Presentations Groups Around the Table	Technical Presentations Rehabilitation	Technical Presentations Software Development & Product Support	Technical Presentations Multitasking & Interruption	Technical Presentations Organizations & Enterprise
	14:00–15:20	Technical Presentations Tabletop & Wall Displays	Technical Presentations Doctor-Patient Care	Technical Presentations Developers & End-user Programmers	Technical Presentations Incentives & User Generated Content	Technical Presentations Courriel
16:00–17:20	Closing Plenary Ethan Zuckerman – Desperately Seeking Serendipity					

Other Venues

Exhibits
Commons
(Ballroom C/D)
17:30 - 19:30

Interactivity 1
Commons
(Ballroom C/D)
17:30 - 19:30

Exhibits
Commons
(Ballroom C/D)
10:00 - 18:00

Interactivity 1
Commons
(Ballroom C/D)
10:00 - 11:00
15:20 - 16:00

Interactivity 2
(Rm 202/203/204)
10:00 - 11:00
15:20 - 16:00
17:30 - 20:00

Posters
WIPs 100-299
(Ballroom Foyer)

Student Design Competition
(Registration Foyer)

Exhibits
Commons
(Ballroom C/D)
10:00 - 18:00

Interactivity 1
Commons
(Ballroom C/D)
10:00 - 11:00
15:20 - 16:00

Interactivity 2
(Rm 202/203/204)
10:00 - 11:00
15:20 - 16:00

Posters
WIPs 300-499
(Ballroom Foyer)

Student Design Competition
(Registration Foyer)

Exhibits
Commons
(Ballroom C/D)
10:00 - 13:30

Interactivity 1
Commons
(Ballroom C/D)
10:00 - 11:00

Interactivity 2
(Rm 202/203/204)
10:00 - 11:00

Posters
Workshops and Doctoral Consortium
(Registration Foyer)

Special Events

Buxton Collection
(Rm 201)
14:00 - 17:20

Conference Reception & Exhibits
Grand Opening
Commons
(Ballroom C/D)
17:30 - 19:30

Interact with Poster Authors
(Ballroom and Registration Foyer)
10:00 - 11:00

Interactivity Performance:
Humanaquarium
(Foyer Level 2)
17:30 - 20:00

What's a Body Know?
(Opens Video Night)

CHI Video Showcase
(Ballroom A/B)
17:30 - 18:30

Job Fair
Commons
(Ballroom C/D)
17:30 - 19:30

Buxton Collection
(Rm 201)
10:00 - 20:00

Interact with Poster Authors
(Ballroom and Registration Foyer)
10:00 - 11:00

Buxton Collection
(Rm 201)
10:00 - 17:20

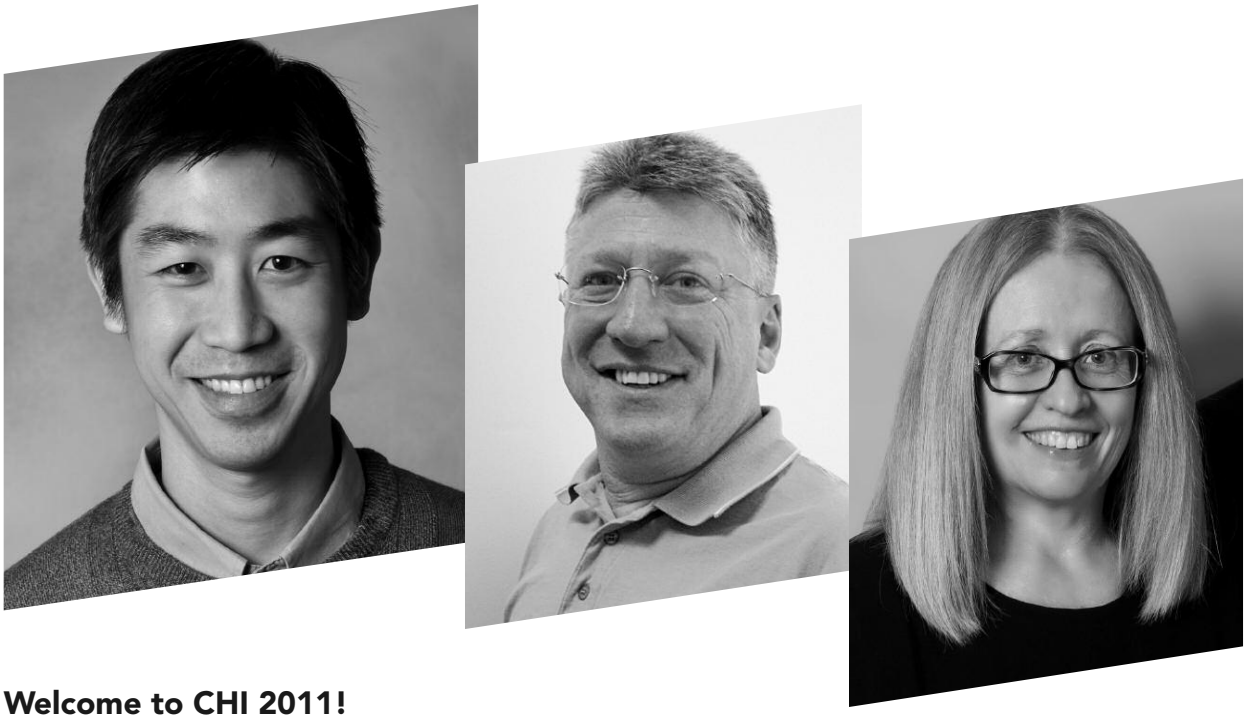
SIGCHI Town Hall Meeting
(Rm 223/224)
12:20 - 14:00

Hospitality Event
(Ballroom Foyer)
18:00 - 20:00

Interactivity Performance:
Graffito
(Featured at Hospitality Event)

Interact with Poster Authors
(Registration Foyer)
10:00 - 11:00

Buxton Collection
(Rm 201)
10:00 - 16:00



Welcome to CHI 2011!

Over the last year or so, we have been blessed with the challenge, the opportunity, and the distinct pleasure of organizing the CHI 2011 Conference on Human Factors in Computing Systems, the premier international conference for the field of human-computer interaction.

CHI 2011 takes place in gorgeous, energetic, sophisticated Vancouver BC, a city renowned for its innovation in entertainment, sustainability, accessibility, and inclusivity. The New York Times calls it, "a liquid city, a tomorrow city, equal parts India, China, England, France and the Pacific Northwest." Vancouver lays a beautiful backdrop for our conference, which boasts nearly 30 years of wonderful work.

Behind the success of the conference is our diverse community of faculty and students, of researchers and practitioners, of young and, well, ... experienced. It is a community of designers, technologists, psychologists, social scientists, biologists, artists, engineers, anthropologists, musicians; the list goes on. Wherever we are, we are always a community of near and far. Most impressively, ours is a community that cares deeply about innovating, learning, sharing, and interacting; all with the common goal of using technology to shape the way people around the world live and play.

Returning attendees will recognize the general conference format – 2 days of small intimate workshops, followed by 4 days of technical content, all surrounded by social and intellectual exchanges. In addition to the familiar venues that form the core of the conference, we have also arranged various special events, such an keynotes by Howard Rheingold and Ethan Zuckerman; invited talks by ACM SIGCHI award winners Terry Winograd, Larry Tesler, Alan Newell, and Clayton Lewis; an HCI museum exhibit hosted by Bill Buxton; and a panel celebrating Stu Card's achievements and contributions to the field of HCI.

With the record number of submissions and accepted content this year, we hope that you will utilize the print and electronic programs, but also the daily CHI Madness presentations that provide a glimpse of the day ahead. In the interest of continuing to evolve the conference to best serve our needs, we will experiment with shorter talks this year (20 minute slots for long pieces of content and 10 for shorter ones) to infuse even more energy into the program. We will also have a pretty full slate of social media applications to help you connect with other attendees and to provide you with the fullest experience possible.

It has been quite the ride, and we'd like to thank everyone involved and welcome you all to the conference. We hope that CHI 2011 inspires you to reflect on the past, the present, and perhaps most importantly, the future of the people and body of work that is ACM SIGCHI. We hope you enjoy CHI 2011 in Vancouver and that you have a great time "Connecting…"

Desney Tan, ***Microsoft Research***
CHI 2011 General Conference Chair

Bo Begole, ***PARC*** **& Wendy Kellogg,** ***IBM Research***
CHI 2011 Technical Program Chairs

CHI 2011 ORGANIZING COMMITTEE

Conference Chair
Desney Tan, *Microsoft Research*
Assistant: Saleema Amershi, *University of Washington*

TECHNICAL PROGRAM

Chairs
Bo Begole, *PARC*
Wendy Kellogg, *IBM Research*
Assistant: Manas Tungare, *Google*

Papers
Geraldine Fitzpatrick, *Vienna University of Technology*
Carl Gutwin, *University of Saskatchewan*

Best Papers/Notes
Sara Kiesler, *Carnegie Mellon University*

alt.chi
Daniel Wigdor, *Microsoft Surface*
Patrick Baudisch, *Hasso Plattner Institute*

Case Studies
Manfred Tscheligi, *University of Salzburg*

Courses
Regina Bernhaupt, *University of Salzburg*
Nancy Frishberg, *MSB Associates*

Doctoral Consortium
Mary Beth Rosson, *Penn State University*
Saul Greenberg, *University of Calgary*

Interactivity
Jan Borchers, *RWTH Aachen University*
Lyn Bartram, *Simon Fraser University*
Sid Fels, *University of British Columbia*

Panels
John C. Thomas, *IBM Research*
Simone Barbosa, *PUC-Rio*

Posters
Anthony Tang, *Georgia Tech*

Special Interest Groups (SIGS)
Ido Guy, *IBM Research*
Daphne Raban, *MSB Associates*

Student Design Competition
Stephen Brewster, *University of Glasgow*
Youn-kyung Lim, *KAIST*

Student Research Competition
Michael Terry, *University of Waterloo*
Anne Aula, *Google*

Video
Michael Bernstein, *MIT*
Shahram Izadi, *Microsoft*

Work-in-Progress (WIPs)
Brian Bailey, *UIUC*
Mark Newman, *University of Michigan*

Workshops
Daniela Busse, *SAP Labs*
Catalina Danis, *IBM Research*

CORE COMMUNITIES

Chair
Arnie Lund, *Microsoft*

Design
Carla Diana, *Smart Design*
Scott Pobiner, *Parsons The New School for Design*

User Experience
Elizabeth Buie, *Luminanze Consulting, LLC*
Jhilmil Jain, *Microsoft*

Engineering
Keith Butler, *University of Washington*
Ruven Brooks, *Independent Consultant*

Management
Jim Nieters, *Yahoo!*
Carola Thompson, *Mindjet*

FEATURED COMMUNITIES

Child Computer Interaction
Janet C. Read, *University of Central Lancashire*
Panos Markopoulos, *Eindhoven University of Technology*
Allison Druin, *University of Maryland*

Games and Entertainment
Regina Bernhaupt, *IRIT*
Katherine Isbister, *NYU-Poly*

Health
Gillian R. Hayes, *University of California, Irvine*
Madhu Reddy, *The Pennsylvania State University*

Sustainability
Azam Khan, *Autodesk Research*
Eli Blevis, *Indiana University-Bloomington*

PARTICIPATION AND VOLUNTEERING

Student Volunteer Coordinators
Aaron Houssian, *Philips Research, TU/Delft*
Vicky McArthur, *York University*

Madness
Max L. Wilson, *Swansea University*
Paul André, *University of Southampton*

Social Media
Cliff Lampe, *Michigan State University*

Publicity
Kirstie Hawkey, *University of British Columbia*

MAKING THINGS HAPPEN

Design Directors
Oscar Murillo, *Microsoft*
Cole Benson, *University of Washington*

Webmaster
Lydia Chilton, *University of Washington*

Proceedings
Max Van Kleek, *MIT*
Nirmal Patel, *Georgia Tech*
Aurélien Tabard, *IT University of Copenhagen*

Program Production
Joan Johnson, *Joan Johnson Design*
Claudia Mezzera, *Foundations of Excellence*

ACM Staff Liaison
Ashley Cozzi, *ACM*

Sponsors and Exhibits
Carol Klyver, *Foundations of Excellence*

Conference Logistics
Janeé Pelletier, *CLC*

Technology Liaison
Scooter Morris, *University of California, San Francisco*
Sara Drenner, *Inuvo*

CMC Staff
Scooter Morris, *University of California, San Francisco*

Registration
Yvonne Lopez, *Executive Events*

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A Place To Be You

Google's mission is to organize the world's information, making it universally accessible and useful. Every day, we bring our spirit of innovation and entrepreneurship to the task, from optimizing search for the visually impaired to creating detailed maps of Mars or developing technology infrastructure in Africa.

To learn more about our new technologies and opportunities, stop by booth #27 & 28, find us at the sponsor reception or visit us online at **http://www.google.com/events/technicalprograms.**

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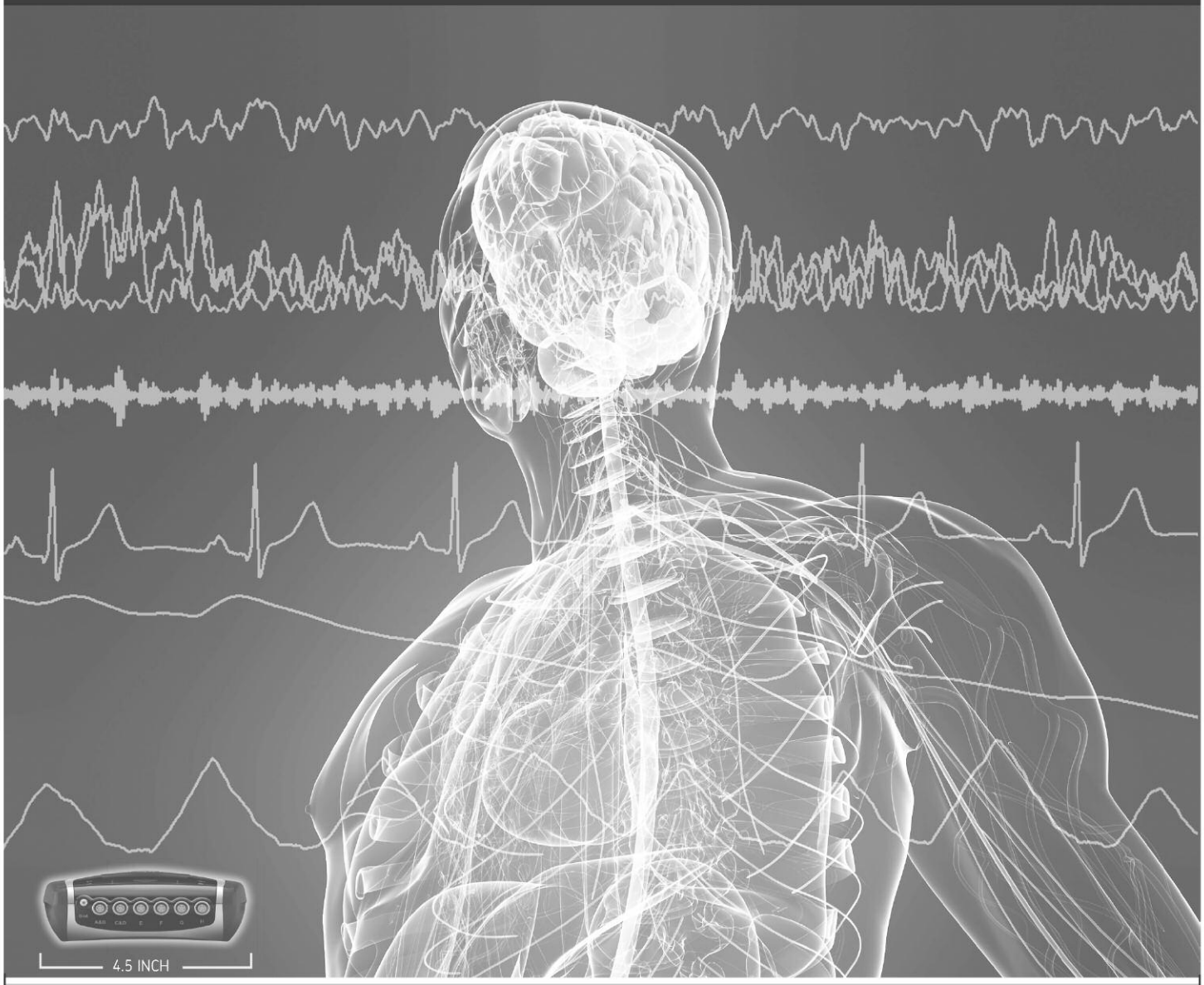
NEXUS-10 MARK II

DISCOVER THE ULTIMATE BRAIN-BODY-COMPUTER INTERFACE...



SUPPORTED SENSORS & INPUT : (DC) EEG • SCP • ERP • P300 • VEP • HEG • EMG • RESPIRATION • ECG • HRV • SKIN TEMPERATURE.
FACIAL EXPRESSION • EYE MOVEMENT • EOG • BVP • BLOODFLOW • SPO2 • SKIN CONDUCTANCE/GSR • ACCELEROMETRY • FORCE AND MORE...

MINDMEDIA

PHYSIOLOGICAL COMPUTING AND FEEDBACK SOLUTIONS FOR BRAIN, BODY AND BEHAVIOUR

If you are interested in the interaction between the brain and body and the way the human nervous system, cognition, behaviour and emotion are linked, then you may want to get to know our new NeXus-10 Mark II.

This is a superb (wireless) physiological platform that captures and interfaces about any body or brain signal or physiological response, including facial expression, eye movement, reaction time and more. In combination with our BioTrace+ software, it offers researchers and developers unprecendented flexibility and versatility. NeXus is a family of systems with 4 to 32+ channels. Please visit our booth at the CHI 2011 conference (Vancouver) for a live demonstration or contact us: sales@mindmedia.nl

NEXUS-10 IS A MIND MEDIA PRODUCT. (NETHERLANDS)

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KINECT for XBOX 360

Windows 7

Office

Windows Phone 7 Series

creativity

impact

innovation

That's what our user experience community thrives on at Microsoft. Creating products that people love to experience.

CHI2011 Vancouver

Booths 1, 2 & 3

"Get Up & Play" is Microsoft's theme for CHI this year. Show off your moves with Kinect, pick up cool swag (backpacks, collapsible water bottles, flashing yoyos), and enter to win Microsoft hardware, software, and games. Meet our researchers and designers, and have fun!

Interested in joining our team?
Go to: http://Microsoftjobs-CHI.com

Microsoft

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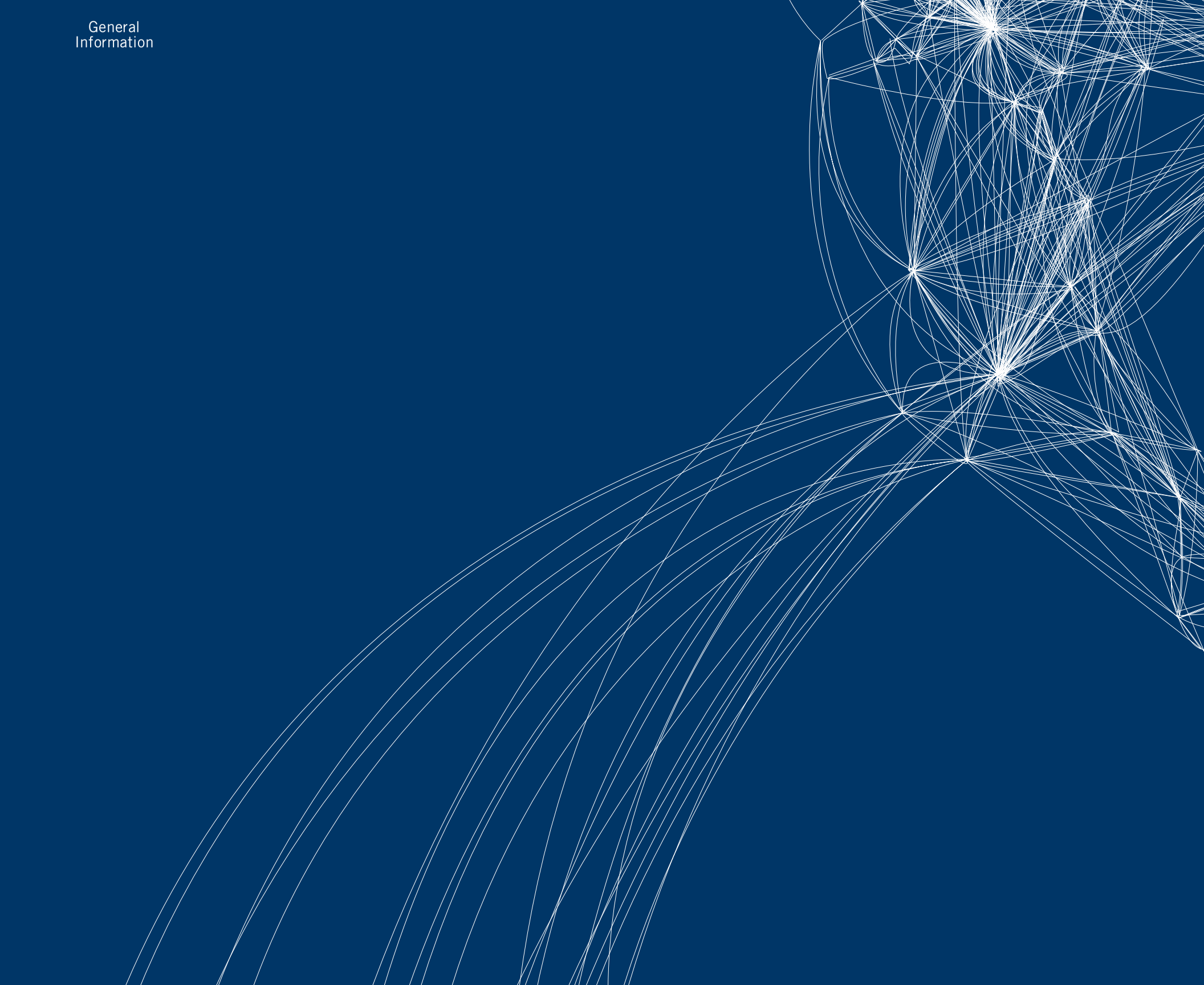
Notes



■ ACM SIGCHI

CHI 2011 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 106,000 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-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 the SIGCHI Town Hall meeting on Wednesday at 12:20 in Room 223/224 (Level 2) 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 2011 OVERVIEW

The CHI 2011 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.

The CHI technical program includes presentations in multiple formats.

■ PRE-CONFERENCE (INVITED ONLY) | SATURDAY & SUNDAY

Doctoral Consortium

The Doctoral Consortium provides an opportunity for selected 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 the Registration Foyer (Level 1) of the Vancouver Convention Centre. Brief descriptions of each poster can also be found in the CHI 2011 Extended Abstracts.

Doctoral Consortium Faculty:
Saul Greenberg (Co-chair), *University of Calgary, Canada*
Mary Beth Rosson (Co-chair), *Pennsylvania State University, USA*

Steven Brewster, *University of Glasgow, UK*
Kristina Höök, *Stockholm University & KTH, Sweden*
Leysia Palen, *University of Colorado, USA*
Steve Whittaker, *IBM Almaden 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. Workshops that choose to produce posters will have their posters on display in the Registration Foyer (Level 1).

■ TECHNICAL PROGRAM | MONDAY — THURSDAY

CHOOSING AND ATTENDING SESSIONS

With so many presentations happening at once, how do you choose? CHI 2011 has put some resources in place to help you make the most of your conference experience:

1. The Conference Program that you are reading now contains a brief description of every piece of content that will be displayed during the conference.
2. The CHI 2011 Conference Proceedings and Extended Abstracts contain the articles that were selected for presentation during the conference. Extra DVDs of the Proceedings and Extended Abstracts are available for sale at the Registration Desk
3. Conference volunteers are also available to answer any questions you may have.
4. 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.

CHI Madness (20 sec presentations)

At the beginning of each day, presenters give a fast-paced overview of the day's program. Although it means coming in early, Madness is probably the most time-efficient way to see an overview of the CHI program each day.

PROCEEDINGS CONTENT

Research papers and notes document work that makes a lasting and significant contribution to our knowledge and understanding of human-computer interaction. Papers and Notes publications appear in the CHI Proceedings.

CHI Papers (20 min presentations)

CHI Papers present significant contributions to research, development, and practice in all areas of the field of human-computer 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 (10 min presentations)

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 (20 min presentations)

Papers from the journal, ACM Transactions on Computer-Human Interaction (ToCHI), will be presented orally at CHI. Authors of papers that were published over the prior year in ToCHI have the opportunity to share their work with you here at CHI.

CONTEMPORARY TRENDS

Contemporary Trends provoke, intrigue, and inspire the CHI audience. These submissions record the history of HCI practice. The publications behind the selection of these presentations appear in the CHI Extended Abstracts.

Courses (one to four 60 or 80 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 lobby area on Level 1.

Case Studies (10 or 20 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 such that their value extends beyond the specific cases that are reported.

Panels (60 or 80 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.

Special Interest Groups (SIGs) (60 or 80 min sessions)

Special Interest Groups (SIGs) enable conference attendees who share similar interests to meet and conduct facilitated discussion.

alt.chi (12 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.

CHI Communities' Invited Events

Community events sessions offer a variety of panels, talks, and presentations from practitioners and researchers at the forefront of their respective communities. You will see a number of "invited" panels, courses and SIG meetings in the program that have been coordinated by specific Communities.

Video Showcase (60 min session)

The videos track is a forum for human-computer interaction that leaps off the page: vision videos, reflective pieces, humor, novel interfaces, studies and other moving images relevant to HCI. This year's selections will have their premiere screenings on Tuesday evening with popcorn and drinks, culminating in the Golden Mouse award ceremony.

Interactivity (demos)

Interactivity is your chance to fully engage at a personal level by seeing, touching, squeezing, hearing or even smelling interactive visions for the future. You will find a number of interactive demonstration exhibits located in the Commons (Ballroom C/D, Level 1) and rooms 202/203/204 (Level 2).

Work-in-Progress (posters)

The Work-in-Progress (WIP) 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 Ballroom Foyer (Level 1) 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 "Interact with Poster Authors" coffee breaks (Tuesday morning for group 1, and Wednesday morning for group 2).

Doctoral Consortium (posters)

Students who participated in the pre-conference Doctoral Consortium will display their posters throughout the conference in the Registration Foyer (Level 1). The students will be available at their posters for discussion during the Thursday morning "Interact with Poster Authors".

Student Design Competition (posters and brief presentations)

This year's Student Design Competition (SDC) challenge was to design an object, interface, system, or service intended to find new solutions, new groups of people and new issues that could benefit from the application of good design and good technology. Students were asked to use methods of ethnography and contextual research to understand the problem space, and develop user-centered design solutions to support, assist, enhance or otherwise benefit a target audience. The top twelve entries were selected from 61 submissions. The finalists were invited to submit a poster detailing their solutions. Students' work will be displayed in the Registration Foyer (Level 1).

SDC judges will select four finalists to present their work in a special SDC session on Thursday after lunch. 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 brief 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 Registration Foyer (Level 1), 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 (Ballroom C/D, Level 1)
Monday, 17:30 – 19:30

Kick off CHI 2011 at the Grand Opening Reception, located inside The Commons. With an unmatched view of Coal Harbor and North Vancouver, The Commons is the ideal place to catch up with old friends and meet new ones. The reception will feature the best that Vancouver has to offer, including local cuisine, British Columbia wines and traditional entertainment. Several of the Interactivity demonstrations will also be present at the reception.

Following the reception, we hope that you will take advantage of all the restaurants that Vancouver has to offer – from ocean-fresh seafood to outstanding local cuisine. Gather a group of colleagues for an informal dinner in Gastown, Chinatown, or the West End.

Admission to the opening reception is included with your conference registration; additional tickets may be purchased at the Registration Desk. Tickets will not be available at the door.

Buxton Collection

Room 201 (Level 2)

As a special event at CHI 2011, Bill Buxton has brought his personal collection of interaction devices that he has collected for more than 30 years. On display in room 201, you will find examples of intriguing designs, both good and bad, as well as seminal inventions.

Job Fair & Recruiting Boards

The Commons (Ballroom C/D, Level 1)
Tuesday, 17:30 – 19:30

CHI 2011 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:
Bloomberg (exhibiting)
eBay/PayPal (exhibiting)
Google, Inc (exhibiting)
Microsoft Corp (exhibiting)

CHI Contributor Recruiters:
Autodesk
IBM Research

Additional Recruiters:
Dell
Facebook (exhibiting)
Samsung (exhibiting)
TANG User Experience Consulting (exhibiting)
User Centric, Inc.

ACM SIGCHI Town Hall Meeting

Room 223/224 (Level2)
Wednesday, 12:20 – 14:00

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.

Joint Hospitality Reception

Ballroom Foyer (Level 1)
Wednesday, 17:30 – 19:30

A joint hospitality reception will be held in the Ballroom Foyer and terrace. Please stop by to meet our hosts and network with old and new colleagues. The cauldron used during the 2010 Winter Olympics will be specially lit for the enjoyment of our attendees, and light appetizers will be served. Your badge is your ticket to enter, so be sure to wear it. You might want to consider coming back to see the Olympic cauldron from the street after you return from your dinner, as the flame will stay lit until about 10:00 pm.

CHI Champions:

Bloomberg
eBay/PayPal
Google, Inc
Microsoft Corp.
SAP AG

CHI Contributors:

IBM Research

Other Hosts:

Virginia Tech & University of California, Irvine & Cornell University

VENUE INFORMATION

Internet Access

Wireless high-speed internet access for your laptop is being provided in the internet café area of The Commons (Ballroom CD) by CHI 2011. 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.

Wireless internet access in the official CHI 2011 hotels is provided by the hotel and included in your CHI 2011 room rate.

Registration

Level 1 Foyer

The CHI 2011 Registration area is located on Level 1 of the Vancouver Convention Centre. On-site registration for the conference and courses (subject to space availability) is located there.

Registration Hours:

Saturday	7:30 – 12:00
Sunday	7:30 – 17:30
Monday	8:00 – 20:30
Tuesday	8:00 – 18:30
Wednesday	8:00 – 17:30
Thursday	8:00 – 16:00

The Commons

Ballroom C/D (Level 1)

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	15:30 – 17:30 (Opening Reception)
Tuesday	10:00 – 17:30 (Job Fair 17:30 – 19:30)
Wednesday	10:00 – 17:30
Thursday	10:00 – 13:30

Coffee Breaks

Regularly scheduled morning and afternoon coffee breaks are complimentary for all registered CHI 2011 delegates. The coffee break schedule is as follows:

Monday
10:00 – 11:00: Ballroom Foyer (Level 1)
15:20 – 16:00: Ballroom Foyer (Level 1)

Tuesday
10:00 – 11:00: Commons/Ballroom C/D (Level 1)
15:20 – 16:00: Commons/Ballroom C/D (Level 1)

Wednesday
10:00 – 11:00: Commons/Ballroom C/D (Level 1)
15:20 – 16:00: Commons/Ballroom C/D (Level 1)

Thursday
10:00 – 11:00: Commons/Ballroom C/D (Level 1)
15:20 – 16:00: Ballroom Foyer (Level 1)

CHI Merchandise

Conference t-shirts, publications, and CDs will be available at the Registration Desk on Level 1. The CHI merchandise desk opens at 12:00 on Monday and will be open during registration hours.

CHI Information Booth

The Commons (Ballroom C/D Level 1)

The info booth is staffed by Student Volunteers who can answer your CHI 2011 questions and assist with recruiting. The CHI Information Booth will be staffed during Commons hours. 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 t-shirts.

International Relations

CHI 2011 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 2011 meeting space 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 facility's inventory. Private family restrooms are located throughout the convention centre, and may be used as a private place to nurse your child. For additional assistance, please check with the conference office.

Speaker Ready Room

Room 103 (Level 1)

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:

Sunday	13:00 – 17:30
Monday	7:30 – 17:30
Tuesday	7:30 – 17:30
Wednesday	7:30 – 17:30
Thursday	7:30 – 14:30

Media/Press Office

Room 101 (Level 1)

CHI 2011 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 2011, SIGCHI, and future CHI conferences. CHI 2011 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.

Digital Program and Social Media Team

The conference is particularly grateful to the following people who devoted time to distribute conference information on social media channels, web applications and smartphone applications.

Tor Bjornrud, *University of Michigan, USA*
Eiji Hayashi, Stephen Oney, Jason Wiese, Justin Weisz, *Carnegie Mellon, USA*
Danny Soroker, Chandra Narayanaswami, *IBM T.J. Watson Research Center, USA*

CHI POLICIES

Cell Phone Courtesy

Please be considerate in your cell phone use. CHI 2011 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 2011 name badge serves as your admission pass to conference sessions and events. Please wear your name badge at all times while inside the conference centre. Conference management reserves the right to deny admission to any persons not wearing a CHI 2011 name badge.

Blogging & Photosharing

CHI encourages conference participants to blog CHI while at the event. Please add the category or keyword "CHI 2011" 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 2011" to your photos. Add "#chi2011" to your tweets to participate in Twitter conversations.

Accompanying Person

CHI 2011 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.

You may purchase a "partner's pass" at the CHI Registration Desk.

Attire

Attire for CHI 2011 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 hotel 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 Canada are 120 volts. If you are traveling from outside of Canada, you will need an adapter to use your small appliances, if they are designed for a different standard. CHI 2011 does not provide power converters, extension cords, power strips or other electric accessories.

■ SERVICES

ATMs

An ATM is located in the main lobby of the Vancouver Convention Center, next to the Guest Services Desk.

Shopping & Dining

The Vancouver Convention Center is directly connected to the Waterfront Center shopping mall, located at 200 Burrard Street. The Waterfront Center has a food court and an assortment of convenient retail outlets. Hundreds of additional restaurants and shops are located within walking distance.

For additional information, visit the Vancouver Concierge Desk located near registration.

First Aid / Emergencies

Your safety is our primary concern. In case of an emergency, please contact the registration desk or the Conference Office (located in Room 108 on Level 1) immediately for assistance. The Vancouver Convention Center Security Department will respond to all emergencies inside the building. Dial the Emergency Line (604-647-7500) from any phone.

Lost & Found

Please turn all lost and found items in to the Registration Desk. CHI 2011 management will then turn lost and found items over to building security at the conclusion of the conference.

Business & Other Services

Although there is not a business center located inside the Vancouver Convention Center, there are several nearby resources for copying and other business services. For assistance, visit the Vancouver Concierge Desk located near registration.

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

■ VANCOUVER, BRITISH COLUMBIA

Vancouver is a dynamic, multicultural city set in a spectacular natural environment. Vancouver consistently rates as one of the top 10 meeting and convention destinations year after year, has been voted one of the world's most livable cities, and has also been voted 'Best City in the Americas' four times by Condé Nast Traveler.

CHI 2011 is delighted to use the Vancouver Convention Centre, an icon on the downtown waterfront that served as the media center for the 2010 Olympic & Paralympic Winter Games. Covering four city blocks, the platinum-certified LEED (Leadership in Energy and Environmental Design) facility is built 40% over water and operates based on stringent environmental standards. The CHI 2011 venue is centrally located, surrounded by ocean and mountains, and perfectly balanced by a vibrant, urban downtown with world-class restaurants, hotels and shopping.

Want more? **Visit the Vancouver Concierge Desk, located near registration,** to learn more about Vancouver's...

- Spectacular Setting: Majestic mountains, sparkling ocean, rainforests and beautiful foliage year round makes Vancouver one of the most beautiful cities in the world.
- Unlimited Activities: Catering to any interest throughout all four seasons, attendees can enjoy world class shopping to outdoor adventures, gourmet meals to live entertainment, sporting events, theatre, outstanding sights and attractions.
- Gateway to Adventure: With quick and easy access to Whistler Resort, the Canadian Rockies, Victoria, Vancouver Island, and of course, endless water and land sports throughout the year, you can find it all here. Vancouver also is the home port for Alaska cruises May through October, which would be an excellent add-on to any trip!

City Transportation

Vancouver's mass transit system, which includes SkyTrain and SeaBus, provides an inexpensive way to navigate the city. The Waterfront Station, conveniently located adjacent to Canada Place, links to the SeaBus and West Coast Express.

For the adventurous sightseer, Vancouver's famous floatplanes (seaplanes) depart from a dock just outside the Convention Centre!

For more information on getting around Vancouver, visit the Vancouver Concierge Desk, located near registration.

CHI ACADEMY

The CHI Academy is an honorary group of individuals who have made extensive contributions to the practice and 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:

Ravin Balakrishnan

Ravin Balakrishnan is an Associate Professor of Computer Science at the University of Toronto. Ravin's research focuses on developing and evaluating novel interaction and visualization techniques and systems for a variety of devices and application scenarios. He is well known for his work on interfaces for new display formats such as 3D displays, surfaces, and ambient displays, enhancing and modeling target acquisition, adding physical simulation to the interface, and sketching interfaces. In addition to his primary appointment at the University of Toronto, Ravin has been a visiting researcher at Mitsubishi Electric Research Labs (MERL), INRIA and the University of Paris, Microsoft Research (Redmond, Beijing, Bangalore and Cambridge), and HP Labs (Bangalore). He has also actively pursued tech-transfer of his research to industry via several startups, and regularly serves on editorial boards and conference committees for the HCI and Graphics communities.

Steven Feiner

Steven Feiner is Professor of Computer Science at Columbia University, where he directs the Computer Graphics and User Interfaces Lab. His research interests include human-computer interaction, augmented reality and virtual environments, 3D user interfaces, knowledge-based design of graphics and multimedia, mobile and wearable computing, computer games, and information visualization. Steve is a coauthor of the well-known computer graphics text, *Computer Graphics: Principles and Practice*, and is responsible for some of the earliest work on automatically designing computer graphics to explain physical tasks. His lab has spent over twenty years developing augmented reality (AR) systems, including the first outdoor mobile AR system using a see-through display, and has pioneered experimental applications of AR to fields such as tourism, journalism, maintenance, and construction. Steve has been active in many conferences, and has served as program chair for UIST 1994 and general chair for UIST 2004.

Joseph Konstan

Joseph Konstan is the Distinguished McKnight University Professor and Distinguished University Teaching Professor in the Department of Computer Science and Engineering at the University of Minnesota. He is a Fellow of the ACM and has served as the President of ACM SIGCHI and as a member of the ACM Council and ACM Executive Committee. He was General Chair of UIST 2003 and RecSys 2007, and is currently General Chair of CHI 2012. Joe's research addresses a variety of human-computer interaction issues, including personalization (particularly through recommender systems), eliciting participation in online communities, and designing computer systems to improve public health. His collaborative work on the GroupLens project led to new algorithms and interfaces for personalized collaborative filtering, including seminal work on recommendation explanations, on interfaces for new users, and on user-centered criteria for evaluating recommender systems. He has also collaborated across disciplines to develop new theoretical and empirical understanding of online question-answering sites and innovative persuasive computing applications focused on behavior-change to reduce AIDS risk among high-risk individuals.

James Landay

James Landay is the Short-Dooley Professor of Computer Science & Engineering (CSE) at the University of Washington (UW). His research over the past two decades has included contributions in the areas of automated usability evaluation, demonstrational interfaces, ubiquitous computing, user interface design tools, and web design. As a graduate student at Carnegie Mellon University, he began creating tools to support fluid user interface design and development through sketching. From 1997-2003, he was a professor at UC Berkeley, where he was tenured after creating a strong HCI research community and continuing to develop tools for non-programmers that explored the then novel design spaces of web site, pen and speech interaction. He moved to Seattle in 2003 to join the faculty in CSE at UW and to direct the Intel Research Seattle lablet, which focused under his leadership on technologies and applications of ubiquitous computing. He has continued his leadership in developing tools for designers, adding to his long list of publicly available design tools through the investigation of location-aware computing, activity-based computing and ubicomp in the home. He was a founding member of the cross-university DUB Group at UW, which under his leadership has quickly become an international power in HCI research. He is currently helping to establish an HCI research center at Microsoft Research Beijing. He has also had success in commercialization efforts. His research contributions and those of his current and former students are alone worthy of election into the CHI Academy. But James' most lasting legacy will be his outstanding ability to create communities of HCI researchers (Berkeley, Intel Research Seattle, Washington) with international prominence and lasting impact.

Jenny Preece

Jenny Preece is Dean of the College of Information Studies, the University of Maryland's iSchool. She has investigated usability and sociability design issues in online communities, including empathy, lurking and posting behaviors, cross-cultural interactions, motivation, and evaluation methods. She authored/coauthored three high-impact books: *Human-Computer Interaction* (1994), *Online Communities: Designing Usability, Supporting Sociability* (2000) and *Interaction Design: Beyond Human-Computer Interaction* (2002, 2007, 2011).

Abigail (Abi) Sellen

Abigail Sellen is a Principal Researcher at the Microsoft Research lab in Cambridge UK, where she co-manages the interdisciplinary Socio-Digital Systems group. Abigail's career spans a number of industrial research labs, including Apple Computer, Xerox's Cambridge Research Centre and Hewlett Packard, Bristol. She is known for her wide range of contributions to HCI, covering input devices, help systems, reading, paper use in offices, Web use, videoconferencing design, computer support for human memory, mobile systems, digital music and more. Her published books include *The Myth of the Paperless Office*, co-authored with Richard Harper, which won an IEEE distinguished literary contribution award. She has filed more than 50 patents, has served on many conference committees and advisory boards, and was recently elected a Fellow of the British Computer Society.

Dennis Wixon

Dennis Wixon is a discipline lead in the Microsoft Business Products Division and Adjunct Professor in the Human Centered Design and Engineering department at the University of Washington. Throughout his career Dennis has focused on applied research methods. In the early 80s he was part of the Software Usability Engineering group at Digital Equipment Corporation, which introduced Usability Engineering, Contextual Inquiry, and the application of analytic methods to logging data. Since joining Microsoft, Dennis has worked in a variety of product areas where he has developed new methods for creating emotionally compelling products such as the RITE method (Rapid Iterative Testing and Evaluation method). Dennis has been active professionally for many years, including serving as a CHI conference co-chair and Vice President for Conferences at SIGCHI. He is the co-author of numerous articles and two books, *Field Methods Case Book for Software Design* (with Dr. Judy Ramey) and *Brave NUI World* (with Dr. Daniel Wigdor).

Congratulations to this year's Academy.

■ SIGCHI LIFETIME RESEARCH AWARD

Along with the Lifetime Practice Award, this 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 Lifetime Research Award to:

Terry Winograd

Terry Winograd is professor of computer science at Stanford University, where he founded and directs the program in human-computer interaction. Over the course of his 40 year career, Terry has made fundamental contributions to the design of interactive computer systems by taking a broad view of HCI, considering it in the context of natural language processing, machine and human intelligence, cognitive science, human-machine communication, design, and software design. After building one of the most advanced natural language interactive systems of its time, he then showed that this symbol-based system was inadequate and proposed a new basis for human-machine interaction that emphasized the contextualized basis of communication in the physical world. Thereafter, he developed the consequences of these ideas for software design and showed how human activities, computer science, and design can be united, not just through a series of articles and books, but also through the design and teaching of a set of classes and the founding of a new design school. Terry has explored other dimensions of the relationship between people and computers, receiving the Rigo Award for lifetime contributions to Computer Documentation (from ACM SIGDOC) and the Founders Award as one of the founders of Computer Professionals for Social Responsibility. He has been a major influence in HCI through broadening its perspectives, demonstrating the relevance and importance of diverse schools of thought to understanding and designing interaction.

■ SIGCHI LIFETIME PRACTICE AWARD

Along with the Lifetime Research Award, this is the most prestigious award SIGCHI gives. It recognizes the very best and most influential applications of human-computer interaction, work that has impacted the field over a career

This year we present the Lifetime Practice Award to:

Larry Tesler

Larry Tesler's work at Xerox PARC and Apple has impacted literally every computer user today. He was closely involved in the invention of a many of the now-familiar low-level interaction techniques in all graphical user interfaces. These included cut-copy-and-paste editing along with their keyboard shortcuts, inserting and overwriting text without entering a mode by simply clicking or dragging and then typing, typing or pasting find and replace text into a form that can be edited before and after searching, between-character text insertion points, drop-down menus, paned-window browsing (now called frames in web browsers), and the GUI integrated development environment (IDE) for programmers including code browsers, object inspectors and stack-inspection debuggers. He identified and publicized the

need to eradicate unnecessary modes from user interfaces, to the extent that this is now standard design practice. He was the first researcher to conduct formative usability studies at PARC. Previously, at Stanford, he had developed the PUB document compiler, an early markup language. At Apple during the 1980s and 1990s, Larry built and managed teams of up to 200 technologists and designers that contributed to such innovative products as Lisa, Macintosh, Color QuickDraw, QuickTime, AppleScript, HyperCard, the Newton, and first commercial object-oriented frameworks (the Lisa ToolKit and MacApp). He also expanded Apple's research and development into new areas such as animation, 3-D graphics, speech synthesis, and scientific visualization. Subsequently he worked as Vice President for User Experience at both Amazon and Yahoo!, before turning to independent consulting.

■ LIFETIME SERVICE AWARD

Arnie Lund

Arnie Lund is a Principal Director of User Experience at Microsoft. He is a member of the ACM SIGCHI Academy, and a Fellow of the Human Factors and Ergonomics Society (HFES). He has a rich history of SIGCHI service including conference co-chair for CHI 1998 and for CHI 2008, and is currently chairing a revitalization of communities within CHI. He has brought his passion and leadership to a variety of roles on CHI conference committees, and founded the SIGCHI chapter in Denver, Colorado. He has reviewed for and served on the boards of several HCI journals. Elected to the HFES Executive Committee, he also chaired the HFES Institute that sponsored the first ANSI HCI standard, served on the standards committee through its long history, and has brought his influence to a wide range of other standards and policy efforts. Arnie has worked tirelessly over the years to grow the larger HCI community and advance the discipline by bridging the diverse groups that make up our field.

Jim Miller

Jim Miller is the principal consultant at Miramontes Interactive, a user experience consultancy. He has a long record of service to SIGCHI and the HCI community, having served on the SIGCHI Executive Committee from 1994 to 1996, including a term as Chair. He was co-chair of CHI'92, and has been a frequent member of the Conference Management Committee. He has held a range of conference and society positions, was a long-time member of the ACM interactions editorial board, and has often worked as an informal liaison between SIGCHI and ACM. He was also a member of the founding committee for BayCHI, the San Francisco Bay Area local SIG.

■ SIGCHI SOCIAL IMPACT AWARD

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

Alan Newell

Alan Newell is the founder head of the School of Computing at Dundee University. This includes the Queen Mother Research Centre, which contains one of the largest academic groups in the world researching computer and communication systems for older and disabled people. Alan has been researching into HCI, particularly by older people and disabled people, for over forty years. His team has developed stenograph transcription systems and television subtitling systems for deaf and hearing impaired people and a wide range of communication systems for non-speaking people. More recently they have been investigating research techniques for use with, and developing computer systems to support, older people. He has given many keynote lectures in conferences in Europe, the UK, the US, Japan, and Canada, including InterCHI 1993 and ASSETS 2002. Together with colleagues, he has won best paper awards at the IEEE Intl. Conf. on Systems, Man and Cybernetics, and the ACM Conference on Assistive Technologies. He was a Deputy Principal of Dundee University between 1992 and 1995. He is a member of the Order of the British Empire, a Fellow of the British Computer Society, a Fellow of the Royal Society of Edinburgh, and an Honorary Fellow of the Royal College of Speech and Language Therapy. In 2006, he was named ACM Fellow for his contribution to computer-based systems for people with disabilities.

Clayton Lewis

Clayton Lewis is a Professor of Computer Science and Scientist in Residence at the Coleman Institute for Cognitive Disabilities at the University of Colorado. He is a pioneer in the science of usability. He was manager of the Human Factors Group at the IBM Watson Research Center in the early 1980s where he led and inspired some of the first HCI projects on iterative, user centered design. He was elected to the CHI Academy in 2009. Most relevant to this Award, he has had a strong influence on HCI with regard to designing for people with cognitive, language, and learning disabilities. He has made designers and developers of accessible technologies aware of these groups, where previously they had been left out. Major projects in which he has participated include Fluid, an international family of projects on accessible Web Technology, the Global Public Inclusive Infrastructure initiative (GPII), and the Rehabilitation Engineering Research Center for the Advancement of Cognitive Technologies (RERC-ACT). His work has been recognized in many ways, including invitations to contribute to deliberations on technology and policy in many national and international venues. Specifically, he has made presentations to the Telecommunications and Electronic and Information Technology Advisory Committee of the US Access Board, G3ICT, and the Interagency Committee on Disability Research. He also is a member of the Scientific Advisory Board of the European Commission AEGIS project.

PAST HONOREES

SIGCHI Lifetime Research Award
2010 Lucy Suchman

SIGCHI Lifetime Practice Award
2010 Karen Holtzblatt

SIGCHI Lifetime Achievement Award
2009 Sara Kiesler
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 2010 Susanne Bødker, Mary Czerwinski, Austin Henderson, David Kieras, Arnie Lund, Larry Tesler, Shumin Zhai

Class of 2009 Mark Ackerman, Bill Gaver, Clayton Lewis, Wendy E. Mackay, Aaron Marcus, Elizabeth Mynatt, Tom Rodden,

Class of 2008 Gregory Abowd, Paul Dourish, Wendy Kellogg, Randy Pausch, Mary Beth Rosson, Steve Whittaker

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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, Jonathan Grudin, Brad Myers, 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
2010 Allison Druin, Ben Bederson
2009 Helen Petrie
2008 Vicki Hanson
2007 Gregory Abowd, Gary Marsden
2006 Ted Henter
2005 Gregg Vanderheiden

SIGCHI Lifetime Service Award
2010 Mary Czerwinski
2009 Clare-Marie Karat, Steven Pemberton
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

SIGCHI 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 2011 and to our field.

SIGCHI Best of CHI 2011 Committee
Sara Kiesler (Chair), *Carnegie Mellon University, USA*
Eric Horvitz, *Microsoft Research, USA*
Tom Finholt, *University of Michigan, USA*
Richard Harper, *Microsoft Research, UK*
Scott Hudson, *Carnegie Mellon University, USA*
John Reidl, *University of Minnesota, USA*
Manfred Tscheligi (Case Studies), *University of Salzburg, Austria*

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Julie Wagner, Emmanuel Pietriga, *INRIA; Université Paris-Sud & CNRS, France*
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Wendy Mackay, *INRIA; Université Paris-Sud & CNRS, France*

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Tim Paek, Bo-June (Paul) Hsu, *Microsoft Research, USA*

CHI 2011 HONORABLE MENTION CASE STUDIES, AWARDED BY SIGCHI

From Basecamp to Summit: Scaling Field Research Across 9 Locations (page 27)
Jens Riegelsberger, *Google UK, UK*
Audrey Yang, *Google Inc., USA*
Konstantin Samoylov, *Google Russia, Russian Federation*
Elizabeth Nunge, Molly Stevens, Patrick Larvie, *Google Inc., USA*

BISi: a Blended Interaction Space (page 32)
Jeni Paay, Jesper Kjeldskov, *Aalborg University, Denmark*
Kenton O'Hara, *Microsoft Research*, UK

Interactive Sparklines: A Dynamic Display of Quantitative Information (page 63)
Leo Frishberg, *Tektronix, Inc, USA*

PRECONFERENCE WORKSHOPS

W01 | Managing UX Experience Teams: Lessons From Case Studies, Establishing Best Practices (Rm 205/206/207)
Dennis Wixon, *Microsoft, USA*
Janice Rohn, *Experian, USA*

W02 | HCI, Politics and the City: Engaging with Urban Grassroots Movements for Reflection and Action (Rm 114/115)
Stacey Kuznetsov, William Odom, *Carnegie Mellon University, USA*
Vicki Moulder, *Simon Fraser University, Canada*
Carl DiSalvo, *Georgia Institute of Technology, USA*
Tad Hirsch, *Intel Corporation, USA*
Ron Wakkary, *Simon Fraser University, Canada*
Eric Paulos, *Carnegie Mellon University, USA*

W03 | Data Collection by the People, for the People (Rm 212/213/214)
Christine Robson, *IBM Research Almaden, University of California, Berkeley, USA*
Sean Kandel, Jeffrey Heer, *Stanford Computer Science, USA*
Jeffrey Pierce, *IBM Research Almaden, USA*

W04 | Analytic Provenance: Process+Interaction+Insight (Rm 208/209)
Chris North, *Virginia Tech, USA*
Remco Chang, *Tufts University, USA*
Alex Endert, *Virginia Tech, USA*
Wenwen Dou, *University of North Carolina, Charlotte, USA*
Richard May, Bill Pike, Glenn Fink, *Pacific Northwest National Lab, USA*

W05 | The User in Flux: Bringing HCI and Digital Arts Together to Interrogate Shifting Roles in Interactive Media (Rm 215)
Tuck Leong, Lalya Gaye, Atau Tanaka, *Newcastle University, UK*
Robyn Taylor, *University of Alberta, Canada*
Peter Wright, *Newcastle University, UK*

W06 | Visible - Actionable - Sustainable: Sustainable Interaction Design in Professional Domains (Rm 122)
Leonardo Bonanni, *MIT Media Lab, USA*
Daniela Busse, *SAP Labs, USA*
John Thomas, *IBM T.J. Watson Research Center, USA*
Eli Blevis, *Indiana University, USA*
Marko Turpeinen, *Helsinki Institute for Information Technology, Finland*
Nuno Nunes, *University of Madeira, Portugal*

W07 | Personal Informatics and HCI: Design, Theory, and Social Implications (Rm 223/224)
Ian Li, Anind Dey, Jodi Forlizzi, *Carnegie Mellon University, USA*
Kristina Höök, *Stockholm University, Sweden*
Yevgeniy Medynskiy, *Georgia Institute of Technology, USA*

W08 | Ethics, Logs and Videotape: Ethics in Large Scale User Trials and User Generated Content (Rm 200)
Matthew Chalmers, Donald McMillan, Alistair Morrison, *University of Glasgow, UK*
Henriette Cramer, Mattias Rost, *SICS / Mobile Life Centre, Sweden*
Wendy Mackay, *Université Paris-Sud, France*

W09 | Gamification. Using Game-Design Elements in Non-Gaming Contexts (Rm 121)
Sebastian Deterding, *Hamburg University, Germany*
Miguel Sicart, *IT University Copenhagen, Denmark*
Lennart Nacke, *University of Saskatchewan, Canada*
Kenton O'Hara, *Microsoft Research Cambridge, UK*
Dan Dixon, *University of the West of England, UK*

W10 | Distributed User Interfaces 2011 (Rm 116/117)
Jose A. Gallud, *Miguel Hernandez University of Elche, Spain*
Ricardo Tesoriero, *University of Castilla-La Mancha, Spain*
Jean Vanderdonckt, *Catholic University of Lovain, Belgium*
Maria Lozano, Victor Penichet, *University of Castilla-La Mancha, Spain*
Federico Botella, *Miguel Hernandez University, Spain*

W11 | Large Displays in Urban Life - from Exhibition Halls to Media Facades (Rm 118)
Uta Hinrichs, *University of Calgary, Canada*
Nina Valkanova, *Universitat Pomeu Fabra, Spain*
Kai Kuikkaniemi, Giulio Jacucci, *Helsinki Institute for Information Technology, Finland*
Sheelagh Carpendale, *University of Calgary, Canada*
Ernesto Arroyo, *Universitat Pomeu Fabra, Spain*

W12 | Video Interaction - Making Broadcasting a Successful Social Media (Rm 210)
Oskar Juhlin, *Mobile Life Centre, Stockholm, Sweden*
Erika Reponen, *Nokia Research, Finland*
Frank Bentley, *Motorola Mobility, USA*
David Kirk, *Horizon Digital Economy Research, UK*

W13 | Privacy for a Networked World: Bridging Theory and Design (Rm 216)
Airi Lampinen, *Helsinki Institute for Information Technology, Aalto University, Finland*
Fred Stutzman, *University of North Carolina - Chapel Hill, USA*
Markus Bylund, *Swedish Institute of Computer Science, Sweden*

W14 | Child Computer Interaction: Workshop on UI Technologies and Educational Pedagogy (Rm 119/120)
Edward Tse, *SMART Technologies, Canada*
Johannes Schöning, *DFKI, Germany*
Jochen Huber, *Technische Universität Darmstadt, Germany*
Lynn Marentette, *Union County Public Schools, USA*
Richard Beckwith, *Intel Corporation, USA*
Yvonne Rogers, *The Open University, UK*
Max Mühlhäuser, *Technische Universität Darmstadt, Germany*

W15 | Designer Experience: Exploring Ways to Design in Experience (Rm 211)
Mika Nieminen, Mikael Runonen, Marko Nieminen, Mari Tyllinen, *Aalto University School of Science, Finland*

W16 | Designing Interaction for the Cloud (Rm 217/218/219)
David England, Martin Randles, Azzelarabe Taleb-Bendiab, *Liverpool John Moores University, UK*

W18 | Everyday Practice and Sustainable HCI: Understanding and Learning from Cultures of (Un) Sustainability (Rm 118)
James Pierce, *Carnegie Mellon University, USA*
Hronn Brynjarsdottir, Phoebe Sengers, *Cornell University, USA*
Yolande Strengers, *RMIT University, Australia*

W19 | Bridging Practices, Theories, and Technologies to Support Reminiscence (Rm 221/222)
Dan Cosley, *Cornell University, USA*
Maurice Mulvenna, *University of Ulster, UK*
Victoria Schwanda, S. Tejaswi Peesapati, *Cornell University, USA*
Terence Wright, *University of Ulster, UK*

W20 | Appropriation and Creative Use: Linking User Studies and Design (Rm 210)
Antti Salovaara, *Aalto University and University of Helsinki, Finland*
Kristina Höök, *Stockholm University, Sweden*
Keith Cheverst, *Lancaster University, UK*
Michael Twidale, *University of Illinois, USA*
Matthew Chalmers, *University of Glasgow, UK*
Corina Sas, *Lancaster University, UK*

W21 | PINC: Persuasion, Influence, Nudge & Coercion Through Mobile Devices (Rm 119/120)
Parisa Eslambolchilar, Max Wilson, *Swansea University, UK*
Ian Oakley, *University of Madeira, Portugal*
Anind Dey, *Carnegie Mellon University, USA*

W22 | Feminism and Interaction Design (Rm 111/112)
Shaowen Bardzell, *Indiana University Bloomington, USA*
Elizabeth Churchill, *Yahoo! Research, USA*
Jeffrey Bardzell, *Indiana University Bloomington, USA*
Jodi Forlizzi, *Carnegie Mellon University, USA*
Rebecca Grinter, *Georgia Institute of Technology, USA*
Deborah Tatar, *Virginia Tech, USA*

W23 | Mobile and Personal Projection (Rm 122)
Raimund Dachselt, *University of Magdeburg, Germany*
Matt Jones, *Swansea University, UK*
Jonna Häkkilä, *Nokia Research Center Tampere, Finland*
Markus Löchtefeld, *German Research Center for Artificial Intelligence (DFKI), Germany*
Michael Rohs, *University of Munich, Germany*
Enrico Rukzio, *University of Duisburg-Essen, Germany*

W24 | Dynamic Accessibility: Accommodating Differences in Ability and Situation (Rm 211)
Amy Hurst, *UMBC, USA*
Krzysztof Gajos, *Harvard University, USA*
Leah Findlater, Jacob Wobbrock, *University of Washington, USA*
Andrew Sears, *UMBC, USA*
Shari Trewin, *IBM T.J. Watson Research Center, USA*

W25 | Social Game Studies at CHI 2011 (Rm 121)
Ben Kirman, *University of Lincoln, UK*
Staffan Björk, *Interactive Institute, Sweden*
Sebastian Deterding, *University of Hamburg, Germany*
Janne Paavilainen, *University of Tampere, Finland*
Valentina Rao, *Utrecht University, Netherlands*

W26 | Brain and Body Interfaces: Designing for Meaningful Interaction (Rm 223/224)
Stephen Fairclough, Kiel Gilleade, *Liverpool John Moores University, UK*
Lennart Nacke, Regan Mandryk, *University of Saskatchewan, Canada*

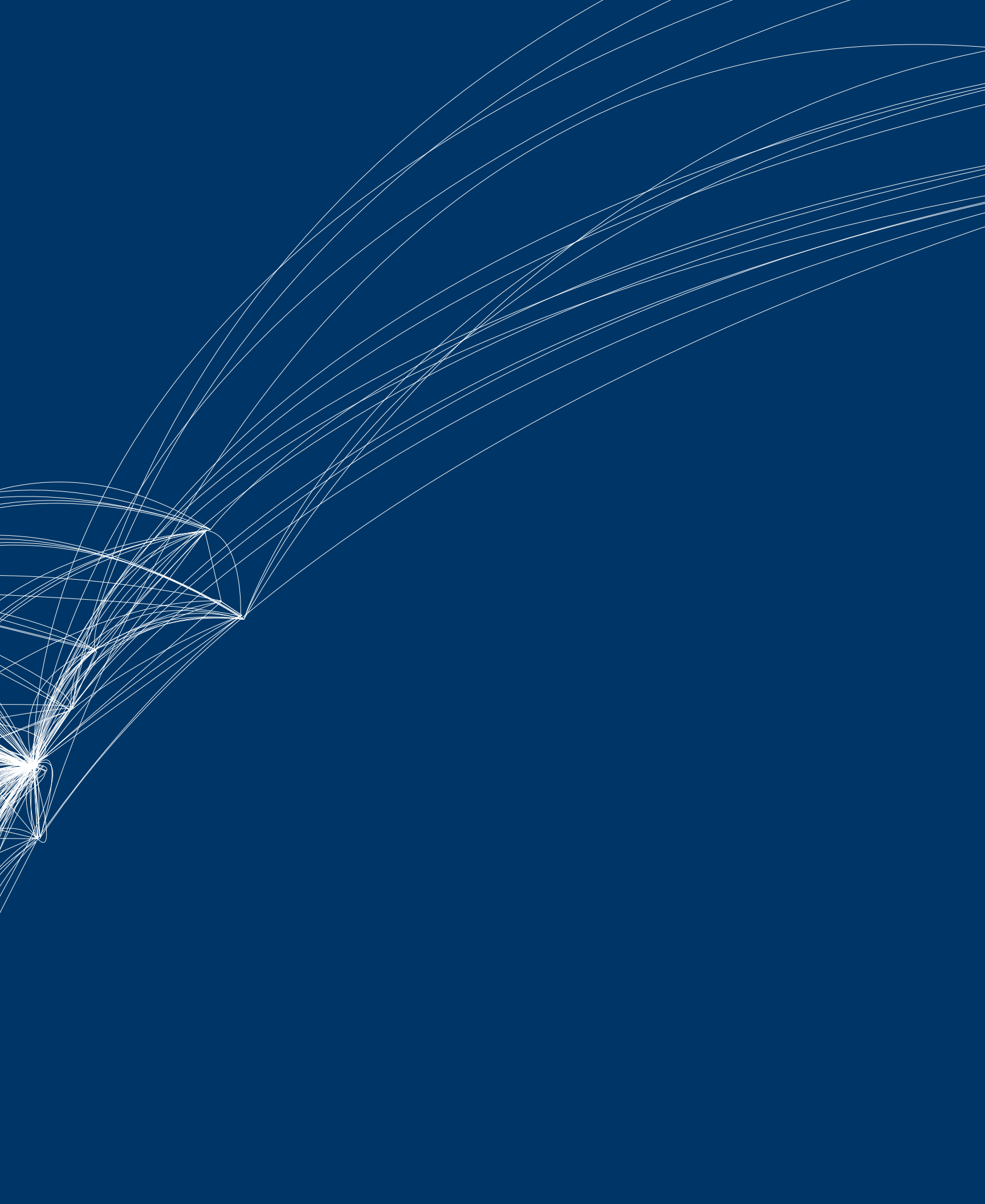
W27 | Workshop on Embodied Interaction: Theory and Practice in HCI (Rm 116/117)
Alissa Antle, *Interactive Arts & Technology, Simon Fraser University, Canada*
Paul Marshall, *Warwick Manufacturing Group, International Digital Laboratory, University of Warwick, UK*
Elise van den Hoven, *Eindhoven University of Technology, Netherlands*

W28 | Performative Interaction in Public Space (Rm 217/218/219)
Lone Hansen, *Aarhus University, Denmark*
Julie Rico, *University of Glasgow, UK*
Giulio Jacucci, *Aalto University, Finland*
Stephen Brewster, *University of Glasgow, UK*
Daniel Ashbrook, *Nokia Research Center Hollywood, USA*

W29 | Crowdsourcing and Human Computation: Systems, Studies and Platforms (Rm 220)
Michael Bernstein, *MIT CSAIL, USA*
Ed Chi, *Google, USA*
Lydia Chilton, *University of Washington, USA*
Björn Hartmann, *University of California, Berkeley, USA*
Aniket Kittur, *Carnegie Mellon University, USA*
Robert Miller, *MIT CSAIL, USA*

W30 | Transnational HCI: Humans, Computers, and Interactions in Transnational Contexts (Rm 216)
Janet Vertesi, *Princeton University, USA*
Silvia Lindtner, *University of California, Irvine, USA*
Irina Shklovski, *IT University of Copenhagen, Denmark*

Monday



= 10 minutes (Note, short Case Study) = 12 minutes (alt.chi) = 20 minutes (Paper, ToCHI, long Case Study) = unscheduled time

	8:45–10:00	10:00–10:30	11:00–12:20	14:00–15:20	16:00–17:20
Ballroom A/B	**Opening Plenary** **Howard Rheingold** My Explorations of Social Media and Social Media Literacies... Page 23	**CHI Madness** Page 23	**Invited Talk** An Informal Walk through 35 Years of Interactive Devices Page 24	**Panel** World of Warcraft as a Global Artifact Page 29	**Invited Panel** Designing for UX: Academia & Industry Page 34
111/ 112			**Invited Panel** Sustainability Community Challenges Ahead Page 24	**SIG** UX Research: What Theoretical Roots Do We Build On – If Any? Page 29	**SIG** Standards and Policy Page 34
119/ 120			**alt.chi** Emotions, Ethics, and Civics Page 24	**Technical Presentations** Watching Together Page 29	**alt.chi** Playing Well with Others Page 34
205/ 206/ 207			**Technical Presentations** Health 1: Technology Challenges Page 25	**Technical Presentations** Health 2: Persuasive Systems Page 29	**Technical Presentations** Health 3: Online Communities & Social Interaction Page 34
208/ 209			**Technical Presentations** Telepresence Page 25	**Technical Presentations** Brain & Bio-sensor Interactions Page 30	**Technical Presentations** Human-Robot Interaction Page 35
210			**SIG** Engineering Automation in Interactive Critical Systems Page 26	**SIG** Touching The 3rd Dimension Page 30	**SIG** The Future of Natural UI Page 35
211			**Technical Presentations** Olfaction, Breath & Biofeedback Page 26	**Technical Presentations** Gestures Page 31	**Technical Presentations** Tagging Page 36
212/ 213/ 214/			**Technical Presentations** Research Methods Page 26	**Technical Presentations** Designing for Values, Democracy & Peace Page 31	**Technical Presentations** HCI for All Page 36
215/ 216			**Technical Presentations** Machine Learning Page 27	**Technical Presentations** Driving Page 32	**Technical Presentations** Emotional States Page 36
217/ 218/ 219			**Technical Presentations** Mid-air Pointing & Gestures Page 27	**Technical Presentations** Meetings & Interaction Spaces Page 32	**Technical Presentations** Identity & Virtual Social Interactions Page 37
220/ 221/ 222			**Technical Presentations** Twitter Systems Page 28	**Technical Presentations** Art, Music & Movement Page 32	**Technical Presentations** Gestures, Body & Touch Page 37
223/ 224			**Technical Presentations** Sex & Bodies Page 28	**Technical Presentations** Facebook Page 33	**Technical Presentations** Pointing 1 Page 38

Technical Presentations include Paper, Note, Case Study and ToCHI presentations

Exhibits	Interactivity	Special Events	
Commons (Ballroom C/D) 17:30 - 19:30	**Interactivity 1** Commons (Ballroom C/D) 17:30 - 19:30	**Buxton Collection** (Rm 201) 14:00 - 17:20	**Conference Reception & Exhibits Grand Opening** Commons (Ballroom C/D) 17:30 - 19:30

Notes

About Howard Rheingold

There are a lot of voices talking about social media today, but Howard Rheingold defined the field before it existed. A noted author and commentator, Rheingold has a proven record of accurate technology and social forecasting, over two decades of syndicated columns, best-selling books, and pioneering online enterprises. His latest research and forthcoming book focuses on 21st century literacies -- how individuals and organizations learn to use digital media effectively and credibly. He coined the term "virtual community" in 1987.

An acknowledged authority on the marriage of mobile phone, PC, and wireless internet, Rheingold's previous work reveals how this convergence has changed the way we meet, mate, entertain, govern, and conduct business. His book Smart Mobs, named one of the "Big Ideas books of 2002" by The New York Times, chronicles the new forms of collective action and cooperation made possible by mobile communications, pervasive computing, and the Internet.

Rheingold is the recipient of a 2008 MacArthur Knowledge-Networking Grant through the Foundation's Digital Media and Learning Competition. He was founding Executive Editor of Hotwired, the first commercial webzine where the web-based discussion forum and the online banner ad were invented. Rheingold has appeared on Today, Good Morning America, ABC Primetime Live, CNN, CBS News, NBC News, Macneill-Lehrer Report, NPR's Fresh Air and Marketplace. He currently teaches at Stanford University.

OPENING PLENARY – BALLROOM A/B

8:45-10:00

MY EXPLORATIONS OF SOCIAL MEDIA AND SOCIAL MEDIA LITERACIES IN TEACHING & LEARNING

Howard Rheingold

Lecturer, *Stanford University*

Author, *Tools for Thought, The Virtual Community, Smart Mobs*

Editor, *Millennium Whole Earth Catalog*

Although not an educator by trade, I've been interested in the potential of online media for learning since I started exploring what I called "virtual communities" in the 1980s. In particular, I was attracted to the ways online media could facilitate collaborative knowledge sharing and exploration. In 1995, I designed a demonstration of a "university of the future" for NEC corporation. In 2006, I started teaching at UC Berkeley and Stanford. I was initially drawn to formal education because I perceived a need to introduce students to the issues of identity, privacy, collective action, public sphere, social capital raised by our increasing use of what are now called social media. It only made sense to use blogs, wikis, forums, chat, and social bookmarking when introducing these subjects. Contrary to popular beliefs about "digital natives," I soon learned that social media literacies are not uniformly understood by today's students. At the same time, by paying attention to what students were telling me about our encounters, I was led to forms of pedagogy that have existed at least since the time of John Dewey but which have not been practical until the advent of social media -- teaching and learning that is more collaborative and inquiry based and which extends beyond the face to face classroom. I'll talk about how I've learned from my students, how we've learned to learn together, and how I am now experimenting with purely online teaching and learning. I'll touch upon the social media literacies that are the subject of my current book in progress: attention, participation, collaboration, crap detection, and network awareness.

CHI MADNESS | BALLROOM A/B

10:00-10:30

SESSION CHAIRS:
Mira Dontcheva, *Adobe Systems*
Matt Jones, *Swansea University*
Max L. Wilson, *Swansea University*

CHI Madness returns to give everyone a lightning speed overview of the day's program.

■ SPECIAL EVENT (INVITED) | BALLROOM A/B

AN INFORMAL WALK THROUGH 35 YEARS OF COLLECTING THE HISTORY OF INTERACTIVE DEVICES

Bill Buxton, *Microsoft, Canada*

This talk is a walk-through of part of Bill Buxton's collection, including the devices that are on display here at CHI. He will talk about what caught his attention with a particular device, how it relates to other devices in the collection, what the relevance is to design today, and why he thinks that it is important and worthy of our attention.

■ PANEL (INVITED) | 111/112

CHI 2011 SUSTAINABILITY COMMUNITY: CHALLENGES AHEAD

PANELISTS

Azam Khan, *Autodesk Research, Canada*
Lyn Bartram, *Simon Fraser University, Canada*
Eli Blevis, *Indiana University–Bloomington, USA*
Carl DiSalvo, *Georgia Institute of Technology, USA*
Jon Froehlich, *University of Washington, USA*
Gordon Kurtenbach, *Autodesk Research, Canada*

CHI Sustainability Community Panel discussing ways in which HCI research will be critical in finding solutions to global environmental challenges.

■ ALT.CHI | 119/120

ALT.CHI: EMOTIONS, ETHICS, AND CIVICS

SESSION CHAIR: Daniel Wigdor, *Microsoft Research*

alt.chi | Does it Matter if a Computer Jokes?

Peter Khooshabeh, *USC, USA*
Cade McCall, *Max Planck Institute, Germany*
Sudeep Gandhe, Jonathan Gratch, *USC, USA*
James Blascovich, *University of California, Santa Barbara, USA*

alt.chi | StoryFaces: Children Exploring Emotional Expressions in Storytelling with Video

Kimiko Ryokai, *University of California, Berkeley, USA*
Robert Kowalski, *University of Munich, Germany*
Hayes Raffle, *Nokia Research Center, USA*

StoryFaces is a new composition and storytelling tool for children to record and embed emotional video expressions in stories. Digital tools leverage pretend-play to empower children in a narrative process.

alt.chi | Web Workers Unite! Addressing Challenges of Online Laborers

Benjamin Bederson, Alexander Quinn, *University of Maryland, USA*

Summary of the ethical concerns related to online labor along with our own experience as online job requesters. Can help requesters understand worker's perspectives and thus improve work.

alt.chi | Design Principles for a New Generic Digital Habitat

Olli-Pekka Pohjola, *Aalto University, Finland*

Our digital habitat, which today consists of desktops, applications and web pages, should be founded on the same abstract concepts, habitats, spaces, information, objects and mechanisms, as our physical habitat.

alt.chi | HappinessCounter: Smile-Encouraging Appliance to Increase Positive Mood

Hitomi Tsujita, *Ochanomizu University, Japan*
Jun Rekimoto, *The University of Tokyo & Sony CSL, Japan*

HappinessCounter is a digital appliance that encourages the act of smiling in our daily lives and thus promotes a positive mood by providing feedback about ones smile through various means.

alt.chi | The Gas Mask: A Probe for Exploring Fearsome Interactions

Joe Marshall, *University of Nottingham, UK*
Brendan Walker, *University of Nottingham Aerial, UK*
Steve Benford, *University of Nottingham, UK*
George Tomlinson, *Aerial, UK*
Stefan Rennick Egglestone, Stuart Reeves, Patrick Brundell, Paul Tennent, Jo Cranwell, *University of Nottingham, UK*
Paul Harter, *CleverPlugs, UK*
Jo Longhurst, *University of Wales, UK*

Case study describing deployment of a gas mask based respiration sensing interface in two horror themed entertainments. Can assist designers wishing to create experiences which scare and unnerve the user.

■ TECHNICAL PRESENTATIONS | 205/206/207

HEALTH 1: TECHNOLOGY CHALLENGES

SESSION CHAIR: Wanda Pratt, *University of Washington*

PAPER | Classroom-Based Assistive Technology: Collective Use of Interactive Visual Schedules by Students with Autism

Meg Cramer, Sen Hirano, *UC Irvine, USA*
Monica Tentori, *UC Irvine/ Universidad Autónoma de Baja California, Mexico*
Michael Yeganyan, Gillian Hayes, *UC Irvine, USA*

Evaluation of an assistive technology for a classroom supporting students with autism.

PAPER | Privacy Risks Emerging from the Adoption of Innocuous Wearable Sensors in the Mobile Environment

Andrew Raij, *University of South Florida, USA*
Animikh Ghosh, *SETLabs, InfoSys, India*
Santosh Kumar, *University of Memphis, USA*
Mani Srivastava, *University of California, Los Angeles, USA*

Presents a user study to investigate privacy risks in sharing innocuous wearable sensor data that may reveal sensitive behaviors. Results show significant privacy risks that demand new privacy research.

CASE STUDY | Identification of Pointing Difficulties of Two Individuals with Parkinson's Disease Via a Sub-movement Analysis

Guarionex Salivia, Juan Pablo Hourcade, *The University of Iowa, USA*

Case study describing pointing performance of two individuals with Parkinson's disease by means of a sub-movement analysis. Can be used to support the need of real-time, personalized methods of assistance.

NOTE | Interaction Design for Cancer Patients: Do We Need to Take Into Account the Effects of Illness and Medication?

Anita Das, Arild Faxvaag, Dag Svanæs, *NTNU, Norway*

Controlled experiment exploring how having cancer and receiving cancer therapy influences upon patients' ability to use an online healthcare system. Can assist designers in developing systems for patients.

NOTE | Simulating the Feel of Brain-Computer Interfaces for Design, Development and Social Interaction

Melissa Quek, Daniel Boland, John Williamson, Roderick Murray-Smith, *University of Glasgow, UK*
Michele Tavella, Serafeim Perdikis, *École Polytechnique Fédérale de Lausanne, Switzerland*
Martijn Schreuder, Michael Tangermann, *Technische Universität Berlin, Germany*

Describes a Brain-Computer Interface (BCI) simulator that models the characteristics of the input mechanism. Replaces real BCI input to applications which affords rapid prototyping and understanding of the interaction.

NOTE | Characterizing Patient-Friendly "Micro-Explanations" of Medical Events

Lauren Wilcox, *Columbia University, USA*
Dan Morris, Desney Tan, *Microsoft Research, USA*
Justin Gatewood, *MedStar Institute for Innovation, USA*
Eric Horvitz, *Microsoft Research, USA*

Introduces a novel format for patient-centered health explanations based on current health information websites. Describes results of a survey study with physicians and non-physicians to characterize features of such explanations.

■ TECHNICAL PRESENTATIONS | 208/209

TELEPRESENCE

SESSION CHAIR: Carman Neustaedter, *Simon Fraser University*

PAPER | "Now, I Have a Body": Uses and Social Norms for Mobile Remote Presence in the Workplace

Min Kyung Lee, *Carnegie Mellon University, USA*
Leila Takayama, *Willow Garage, USA*

Presents interview, field observation, and survey results from three companies that used mobile remote presence systems. Can inform research and design of mobile remote presence systems for distributed work teams.

PAPER | Hands on Hitchcock: Embodied Reference to a Moving Scene

Paul Luff, *King's College London, UK*
Naomi Yamashita, *NTT, Japan*
Hideaki Kuzuoka, *University of Tsukuba, Japan*
Christian Heath, *King's College London, UK*

This paper analyses how people interact in a high fidelity mediaspace that presents life-size embodiments of participants. It considers how the design facilitates interaction and implications for future collaborative technologies.

PAPER | Exploring Camera Viewpoint Control Models for a Multi-Tasking Setting in Teleoperation

Dingyun Zhu, *CSIRO / ANU, Australia*
Tom Gedeon, *ANU, Australia*
Ken Taylor, *CSIRO, Australia*

Compares three different camera viewpoint control models for a multi-tasking (hands-busy) problem in teleoperation. Can assist in developing more natural and intuitive remote camera controlnterfaces.

PAPER | Zoom Cameras and Movable Displays Enhance Social Telepresence

Hideyuki Nakanishi, Kei Kato, Hiroshi Ishiguro, *Osaka University, Japan*

Describes techniques for augmenting a remote person's positional movement to enhance users' feeling of facing the person in visual communication. The technique can improve the reality of videoconferencing.

■ **SPECIAL INTEREST GROUP | 210**

ENGINEERING AUTOMATION IN INTERACTIVE CRITICAL SYSTEMS

ORGANIZERS

Regina Bernhaupt, *ruwido, Austria*
Guy Boy, *Florida Inst. of Technology, USA*
Michael Feary, *NASA Ames Research Center, USA*
Philippe Palanque, *Université de Toulouse, France*

■ **TECHNICAL PRESENTATIONS | 211**

OLFACTION, BREATH & BIOFEEDBACK

SESSION CHAIR: Rob Jacob, *Tufts University*

PAPER | Breath Control of Amusement Rides

Joe Marshall, *University of Nottingham, UK*
Duncan Rowland, *University of Lincoln, UK*
Stefan Rennick Egglestone, Steve Benford, Brendan Walker, Derek McAuley, *University of Nottingham, UK*

A study of a breath controlled 'bucking bronco' ride is used to explore breath control. Can aid designers in understanding how to use breathing as an interaction mode.

PAPER | Time Characteristics of Olfaction in a Single Breath

Daisuke Noguchi, Sayumi Sugimoto, *Keio University, Japan*
Yuichi Bannai, *Canon Inc., Japan*
Ken-ichi Okada, *Keio University, Japan*

Describes a scent presentation timing where the user can effectively sense scents. Can help users of olfactory display to effectively perform the presentations which uses small amount of fragrance.

PAPER | Augmented Reality Flavors: Gustatory Display Based on Edible Marker and Cross-Modal Interaction

Takuji Narumi, *The University of Tokyo/JSPS, Japan*
Shinya Nishizaka, Takashi Kajinami, Tomohiro Tanikawa, Michitaka Hirose, *The University of Tokyo, Japan*

Describes a "pseudo-gustatory" method to present the desired flavors by means of a cross-modal effect elicited by visual and olfactory augmented reality. It enables us to deal with gustatory information.

PAPER | Biofeedback Game Design: Using Direct and Indirect Physiological Control to Enhance Game Interaction

Lennart Nacke, Michael Kalyn, Calvin Lough, Regan Mandryk, *University of Saskatchewan, Canada*

We present a new axis considering physiological game control and show player responses to manipulations on this axis. This is an opportunity for interaction design researchers to innovate in physiologically controlled gaming.

■ **TECHNICAL PRESENTATIONS | 212/213/214**

RESEARCH METHODS

SESSION CHAIR: Jennifer Lai, *IBM T.J. Watson Research Center*

PAPER | Confessions from a Grounded Theory PhD: Experiences and Lessons Learnt

Dominic Furniss, Ann Blandford, *University College London, UK*
Paul Curzon, *Queen Mary University of London, UK*

An extended Grounded Theory case study focused on methodological issues. Offers lessons learnt in applying the method, particularly in managing the inductive process and using theoretical lenses as tools.

PAPER | Reflexivity in Digital Anthropology

Jennifer Rode, *Drexel University, USA*

This paper looks at the practices of digital anthropology and how they contribute to reflexive design in HCI. The paper overviews key aspects its use in HCI and in anthropology.

PAPER | Comparing Activity Theory with Distributed Cognition for Video Analysis: Beyond "Kicking the Tires"

Eric Baumer, *Cornell University, USA*
Bill Tomlinson, *University of California, Irvine, USA*

This paper applies activity theory and distributed cognition to the same video data, providing both a practical comparison of the theories themselves and broader discussion of theory's role in HCI.

CASE STUDY | From Basecamp to Summit: Scaling Field Research Across 9 Locations

Jens Riegelsberger, *Google UK, UK*
Audrey Yang, *Google, Inc., USA*
Konstantin Samoylov, *Google Russia, Russian Federation*
Elizabeth Nunge, Molly Stevens, Patrick Larvie, *Google, Inc., USA*

A case study describing methods, logistics, and learnings from running a 1-week field research project across 9 locations. Informs researchers about risks and benefits of running research under similar constraints.

NOTE | The Aligned Rank Transform for Nonparametric Factorial Analyses Using Only ANOVA Procedures

Jacob Wobbrock, Leah Findlater, *University of Washington, USA*
Darren Gergle, *Northwestern University, USA*
James Higgins, *Kansas State University, USA*

Presents the Aligned Rank Transform, a statistical technique for performing nonparametric factorial ANOVAs capable of examining interaction effects, even for repeated measures data. Useful for evaluations in HCI.

■ **TECHNICAL PRESENTATIONS | 215/216**

MACHINE LEARNING

SESSION CHAIR: Krzysztof Gajos, *Harvard University*

PAPER | Human Model Evaluation in Interactive Supervised Learning

Rebecca Fiebrink, Perry Cook, Dan Trueman, *Princeton University, USA*

Discusses users' model evaluation criteria and techniques for end-user interactive machine learning applied to musical gesture analysis. Illuminates new challenges and benefits of incorporating human interaction into supervised learning.

PAPER | CueT: Human-Guided Fast and Accurate Network Alarm Triage

Saleema Amershi, *University of Washington, USA*
Bongshin Lee, Ashish Kapoor, Ratul Mahajan,
Microsoft Research, USA
Blaine Christian, *Microsoft Corporation, USA*

CueT improves speed and accuracy of network alarm triage by combining interactive machine learning and novel visualizations. Can be extended to dynamic environments where humans must organize continuous data streams.

PAPER | Apolo: Making Sense of Large Network Data by Combining Rich User Interaction and Machine Learning

Duen Horng Chau, Aniket Kittur, Jason Hong, Christos Faloutsos,
Carnegie Mellon University, USA

The mixed-initiative Apolo system helps people make sense of large networks, by combining rich user interaction, machine learning, and visualization. Apolo users found more relevant work than Google Scholar.

■ **TECHNICAL PRESENTATIONS | 217/218/219**

MID-AIR POINTING & GESTURES

SESSION CHAIR: Michael Rohs, *LMU Munich*

PAPER | Mid-air Pan-and-Zoom on Wall-sized Displays

Mathieu Nancel, *Université Paris-Sud & CNRS, INRIA, France*
Julie Wagner, Emmanuel Pietriga, *INRIA, Université Paris-Sud & CNRS, France*
Olivier Chapuis, *Université Paris-Sud & CNRS, INRIA, France*
Wendy Mackay, *INRIA, Université Paris-Sud & CNRS, France*

Design and evaluation of multiscale navigation techniques for very large displays based on three key factors: number of hands involved, type of movement, type of feedback.

PAPER | Gesture Select: Acquiring Remote Targets on Large Displays without Pointing

Andrew Bragdon, Hsu-Sheng Ko, *Brown University, USA*

Presents a novel technique for selecting remote targets on large displays without pointing. Formal evaluations indicate Gesture Select significantly outperformed direct selection and an existing technique.

PAPER | User-Defined Motion Gestures for Mobile Interaction

Jaime Ruiz, *University of Waterloo, Canada*
Yang Li, *Google Research, USA*
Edward Lank, *University of Waterloo, Canada*

Presents a study that elicits end-user motion gestures to invoke commands on a smartphone device. Informs design of motion gestures by providing a user-defined gesture set and taxonomy of motion gestures.

PAPER | Gesture Avatar: A Technique for Operating Mobile User Interfaces Using Gestures

Hao Lü, *University of Washington, USA*
Yang Li, *Google Research, USA*

Describes an interaction technique for operating existing mobile interfaces on a touchscreen using gestures. The technique greatly reduces the effort in operating small widgets and under on-the-go scenarios without sacrificing performance.

■ **TECHNICAL PRESENTATIONS | 220/221/222**

TWITTER SYSTEMS

SESSION CHAIR: Sharoda Paul, *PARC*

PAPER | Speak Little and Well: Recommending Conversations in Online Social Streams

Jilin Chen, *University of Minnesota, USA*
Rowan Nairn, Ed Chi, *PARC, USA*

Demonstrated through a user study the effectiveness of five algorithms for recommending interesting conversations on Twitter. Showed how usage purpose of Twitter affects user preference of conversations and algorithm performance.

PAPER | TwitInfo: Aggregating and Visualizing Microblogs for Event Exploration

Adam Marcus, Michael Bernstein, Osama Badar, David Karger, Samuel Madden, Robert Miller, *MIT, USA*

TwitInfo is a timeline-based visualization of tweets discussing any event. Users can explore aggregate sentiment and map views of tweets, and follow events of interest in real-time.

PAPER | Tweets from Justin Bieber's Heart: The Dynamics of the "Location" Field in User Profiles

Brent Hecht, *Northwestern University, USA*
Lichan Hong, Bongwon Suh, Ed Chi, *PARC, USA*

Provides a detailed analysis of user behavior surrounding the "location" field in Twitter user profiles. Through a machine learning study, this behavior is considered in the context of location inference.

PAPER | An Open, Social Microcalender for the Enterprise: Timely?

Werner Geyer, Casey Dugan, Beth Brownholtz, *IBM T.J. Watson Research Center, USA*
Mikhil Masli, *University of Minnesota, USA*
Elizabeth Daly, David Millen, *IBM T.J. Watson Research Center, USA*

We describe the system design and early lessons learned from the trial of a novel online microcalendaring system that supports sharing, socializing, and discovery of events.

■ **TECHNICAL PRESENTATIONS | 223/224**

SEX & BODIES

SESSION CHAIR: Volker Wulf, *University of Siegen*

PAPER | "Pleasure is Your Birthright": Digitally Enabled Designer Sex Toys as a Case of Third-Wave HCI

Jeffrey Bardzell, Shaowen Bardzell, *Indiana University Bloomington, USA*

This paper provides a case study that elucidates design processes for 3rd-wave HCI. It offers a synthesis of 30 hours of interviews with influential sex toy designers.

PAPER | Designing a Phone Broadcasting System for Urban Sex Workers in India

Nithya Sambasivan, *University of California, Irvine, USA*
Julie Weber, Edward Cutrell, *Microsoft Research India, India*

Describes the design of a broadcasting system for a marginalized population; identifies the unique lifestyle issues and design implications of interactive systems for invisible and wary populations.

CASE STUDY | Self-Evidence: Applying Somatic Connoisseurship to Experience Design

Thecla Schiphorst, *Simon Fraser University, Canada*

This design case study examines the concept of self-evidence by applying somatic connoisseurship to design for experience of the self, inviting a re-thinking of design epistemologies for technology.

PAPER | Bodily Orientations around Mobiles: Lessons Learnt in Vanuatu

Pedro Ferreira, Kristina Höök, *Mobile Life @ Stockholm University, Sweden*

Fieldwork conducted in a province of Vanuatu during the first weeks after mobile telephony emerged. Can assist mobile and interaction designers reflecting upon somaesthetic issues during their design processes.

■ PANEL | BALLROOM A/B

WORLD OF WARCRAFT AS A GLOBAL ARTIFACT

PANELISTS

Jeffrey Bardzell, Shaowen Bardzell, *Indiana University Bloomington, USA*
Bonnie Nardi, *University of California, Irvine, USA*
Lisa Nakamura, *University of Illinois at Urbana-Champaign, USA*
Christopher Paul, *Seattle University, USA*
Nick Yee, *PARC, USA*

Researchers from the social sciences and humanities consider how World of Warcraft, as a virtual world and as a sociotechnical system, creates and sustains a global community.

■ SPECIAL INTEREST GROUP | 111/112

UX RESEARCH: WHAT THEORETICAL ROOTS DO WE BUILD ON – IF ANY?

ORGANIZERS

Marianna Obrist, *University of Salzburg, Austria*
Effie Law, *University of Leicester, UK*
Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, Finland*
Virpi Roto, *University of Helsinki, Finland*
Arnold Vermeeren, *Delft University of Technology, Netherlands*
Kari Kuutti, *University of Oulu, Finland*

■ TECHNICAL PRESENTATIONS | 119/120

WATCHING TOGETHER

SESSION CHAIR: Ed Chi, *Google, Inc.*

ToCHI | Time Warp Sports for Internet Television

Dan Olsen, Brett Partridge, Stephen Lynn, *Brigham Young University, USA*

PAPER | We Want More: Human-Computer Collaboration in Mobile Social Video Remixing of Music Concerts

Sami Vihavainen, *Helsinki Institute for Information Technology, Aalto University, Finland*
Sujeet Mate, *Nokia Research Center, Finland*
Lassi Seppälä, *Helsinki Institute for Information Technology, Aalto University, Finland*
Francesco Cricri, *Tampere University of Technology, Finland*
Igor Curcio, *Nokia Research Center, Finland*

Case study comparing the processes and products of manual and automatic mobile video remixing. Can assist in understanding the implications of automation in mobile social video remixing services.

PAPER | Knowing Funny: Genre Perception and Categorization in Social Video Sharing

Jude Yew, *University of Michigan, USA*
David Shamma, Elizabeth Churchill, *Yahoo! Research, USA*

A multipart study of how people categorize the genres of shared online videos and how conversational metadata can be utilized to automatically determine the nature and characteristics of video content.

NOTE | Real-Time Nonverbal Opinion Sharing through Mobile Phones during Sports Events

Alireza Sahami Shirazi, *University Duisburg-Essen, Germany*
Michael Rohs, *Ludwig-Maximilians-Universität , Germany*
Robert Schleicher, Sven Kratz, *Technische Universität Berlin, Germany*
Alexander Müller, Albrecht Schmidt, *University Duisburg-Essen, Germany*

Mobile phones can serve as an additional communication channel for connecting non-collocated TV viewers and sharing emotional reactions to TV content in real-time, resulting in increased enjoyment and connectedness.

NOTE | Are We in Sync? Synchronization Requirements for Watching Online Video Together.

David Geerts, *Katholieke Universiteit Leuven, IBBT, Belgium*
Ishan Vaishnavi, *CWI, Netherlands*
Rufael Mekuria, Oskar van Deventer, *TNO, Netherlands*
Pablo Cesar, *CWI, Netherlands*

Discusses synchronization of online videos being watched together while communicating. Helps developers of social video applications to define the video synchronization requirements for voice or text chat on specific platforms.

■ TECHNICAL PRESENTATIONS | 205/206/207

HEALTH 2: PERSUASIVE SYSTEMS

SESSION CHAIR: Elizabeth Gerber, *Northwestern University*

PAPER | Designing for Peer Involvement in Weight Management

Julie Maitland, *National Research Council of Canada, Canada*
Matthew Chalmers, *University of Glasgow, UK*

This work explores the scope and mechanics of peer involvement in weight management. Can assist those interested in researching and designing peer-based weight management technology for use in everyday life.

PAPER | Mining Behavioral Economics to Design Persuasive Technology for Healthy Choices

Min Kyung Lee, Sara Kiesler, Jodi Forlizzi, *Carnegie Mellon University, USA*

Influence through information and feedback has been one of the main approaches of persuasive technology. We propose another approach based on behavioral economics research on decision-making.

PAPER | Means Based Adaptive Persuasive Systems.

Maurits Kaptein, *Eindhoven University Of Technology, Netherlands*
Steven Duplinsky, *Accenture Technology, USA*
Panos Markopoulos, *Eindhoven University of Technology, Netherlands*

In two studies we show that (a) free conscious choice between different persuasive strategies positively influences compliance and that (b) simultaneous usage of multiple persuasive strategies is not necessarily beneficial.

NOTE | Side Effects and 'Gateway' Tools: Advocating a Broader Look at Evaluating Persuasive Systems

Victoria Schwanda, Steven Ibara, Lindsay Reynolds, Dan Cosley, *Cornell University, USA*

This paper argues for evaluating the impact of persuasive systems on users beyond metrics that focus on system usage, based on an interview study of 16 Wii Fit users.

NOTE | I Will Do It, but I Don't Like It: User Reactions to Preference-Inconsistent Recommendations

Christina Schwind, Juergen Buder, Friedrich W. Hesse, *Knowledge Media Research Center, Germany*

An online experiment investigating the reduction of human confirmation bias through preference-inconsistent recommendations. The contribution makes a case for recommender systems that are not maximally tailored to what users like.

■ **TECHNICAL PRESENTATIONS | 208/209**

BRAIN & BIO-SENSOR INTERACTIONS

SESSION CHAIR: Regan Mandryk, *University of Saskatchewan*

PAPER | Embodiment in Brain-Computer Interaction

Kenton O'Hara, Abigail Sellen, Richard Harper, *Microsoft Research, UK*

The paper presents a real world study of brain computer interaction (BCI) for play. The study explores the role of the body in BCI, highlighting implications for BCI design and value.

PAPER | Now Where Was I? Physiologically-Triggered Bookmarking

Matthew Pan, Jih-Shiang Chang, Gokhan Himmetoglu, AJung Moon, Thomas Hazelton, Karon MacLean, Elizabeth Croft, *The University of British Columbia, Canada*

Physiological monitoring of a user's orienting response during audiobook listening is used to bookmark points of interruption. Presents a use case and holistically explores an implicit interaction concept.

PAPER | This is Your Brain on Interfaces: Enhancing Usability Testing with Functional Near-Infrared Spectroscopy

Leanne Hirshfield, *Hamilton College, USA*
Rebecca Gulotta, *Carnegie Mellon University, USA*
Stuart Hirshfield, Sam Hincks, Matthew Russell, Rachel Ward, Tom Williams, *Hamilton College, USA*
Robert Jacob, *Tufts University, USA*

We introduce techniques to non-invasively measure a range of cognitive workload states that have implications to HCI research, most directly usability testing.

PAPER | Sensing Cognitive Multitasking for a Brain-Based Adaptive User Interface

Erin Solovey, Francine Lalooses, Krysta Chauncey, Douglas Weaver, Margarita Parasi, Matthias Scheutz, Angelo Sassaroli, Sergio Fantini, *Tufts University, USA*
Paul Schermerhorn, *Indiana University, USA*
Audrey Girouard, *Queen's University, Canada*
Robert Jacob, *Tufts University, USA*

Describes two experiments detecting cognitive multitasking processes with functional near-infrared spectroscopy and a proof-of-concept adaptive interface platform utilizing this data as input. Builds a foundation for brain-based adaptive user interfaces.

■ **SPECIAL INTEREST GROUP | 210**

TOUCHING THE 3RD DIMENSION (T3D)

ORGANIZERS

Frank Steinicke, *WWU Münster, Germany*
Hrvoje Benko, *Microsoft Research, USA*
Florian Daiber, *DFKI GmbH, Germany*
Daniel Keefe, *University of Minnesota, USA*
Jean-Baptiste de la Rivière, *Immersion, France*

■ TECHNICAL PRESENTATIONS | 211

GESTURES

SESSION CHAIR: Steven Feiner, *Columbia University*

PAPER | RemoteTouch: Touch-Screen-like Interaction in the TV Viewing Environment

Sangwon Choi, Jaehyun Han, Geehyuk Lee, Narae Lee, Woohun Lee, *KAIST, Republic of Korea*

Describes an implementation of a TV remote interface with a hover-tracking optical touchpad. Enables touch-screen-like interaction avoiding the problem of divided attention between a remote and the TV screen.

PAPER | Experimental Analysis of Touch-Screen Gesture Designs in Mobile Environments

Andrew Bragdon, Eugene Nelson, *Brown University, USA*
Yang Li, *Google Research, USA*
Ken Hinckley, *Microsoft Research, USA*

A study of the performance of soft buttons and four gestural UIs under varying environmental demands on attention, finding that gestures can offer performance gains and reduced attentional load.

PAPER | Usable Gestures for Blind People: Understanding Preference and Performance

Shaun Kane, Jacob Wobbrock, Richard Ladner, *University of Washington, USA*

User study in which blind and sighted users performed gestures on touch screens. Our analysis compares users' preference and performance characteristics, and provides guidance for designing future touch screen user interfaces.

CASE STUDY | Natural Activation for Gesture Recognition Systems

Mathieu Hopmann, *EPFL, Switzerland*
Patrick Salamin, Nicolas Chauvin, Frédéric Vexo, *Logitech, Switzerland*
Daniel Thalmann, *EPFL, Switzerland*

This paper presents two trigger techniques for activating gesture based interfaces: the gaze estimation activation and the remote control activation.

■ TECHNICAL PRESENTATIONS | 212/213/214

DESIGNING FOR VALUES, DEMOCRACY & PEACE

SESSION CHAIR: Jofish Kaye, *Nokia Research*

PAPER | Fit4Life: The Design of a Persuasive Technology Promoting Healthy Behavior and Ideal Weight

Stephen Purpura, Victoria Schwanda, Kaiton Williams, William Stubler, Phoebe Sengers, *Cornell University, USA*

In this paper we present a design and critical review of a modern persuasive mobile technology to encourage fitness and healthy lifestyle.

PAPER | Many Bills: Engaging Citizens through Visualizations of Congressional Legislation

Yannick Assogba, Irene Ros, Joan DiMicco, *IBM, USA*
Matt McKeon, *Google, USA*

Many Bills is a web-based visualization system designed to make the tasks of reading congressional legislation, identifying outlier sections within congressional legislation, and understanding congressperson's legislative activity more manageable.

PAPER | HCI for Peace: A Call for Constructive Action

Juan Pablo Hourcade, Natasha Bullock-Rest, *University of Iowa, USA*

Reviews empirical evidence on factors affecting the likelihood of armed conflict. Presents a research agenda for the HCI community focused on promoting peace and preventing armed conflict.

PAPER | Evaluating a Pattern-Based Visual Support Approach for Humanitarian Landmine Clearance

Lahiru Jayatilaka, *Harvard University, USA*
Luca Bertuccelli, *MIT, USA*
James Staszewski, *Carnegie Mellon University, USA*
Krzysztof Gajos, *Harvard University, USA*

Presents novel visual support approach to improve the safety and efficiency of humanitarian landmine clearance. Participants using this approach were 80% less likely to mistake a landmine for harmless clutter.

■ TECHNICAL PRESENTATIONS | 215/216

DRIVING

SESSION CHAIR: Dario Salvucci, *Drexel University*

PAPER | Hang on a Sec! Effects of Proactive Mediation of Phone Conversations While Driving

Shamsi Iqbal, Eric Horvitz, Yun-Cheng Ju, *Microsoft Research, USA*
Ella Mathews, *California Institute of Technology, USA*

This paper investigates the effectiveness of automated interventions during scenarios involving driving and cell phone conversations. Different types of interventions that alerted participants towards road conditions were tested.

PAPER | Fast or Safe? How Performance Objectives Determine Modality Output Choices While Interacting on the Move

Duncan Brumby, Samantha Davies, Christian Janssen, Justin Grace, *University College London, UK*

Audio interfaces hold promise for in-car devices, but our results suggest that when information is needed quickly drivers will look to a display rather than patiently listening to audio.

PAPER | Gestural Interaction on the Steering Wheel - Reducing the Visual Demand

Tanja Döring, Dagmar Kern, *University of Duisburg-Essen, Germany*
Paul Marshall, *University of Warwick, UK*
Max Pfeiffer, *University of Duisburg-Essen, Germany*
Johannes Schöning, *German Research Center for Artificial Intelligence Saarbrücken, Germany*
Albrecht Schmidt, *University of Stuttgart, Germany*
Volker Gruhn, *University of Duisburg-Essen, Germany*

Describes a multi-touch steering wheel as novel in-car user interface. Presents a user-defined gesture set and a comparative study to conventional UIs for infotainment systems. Visual demand was reduced significantly.

PAPER | Usability of Car Dashboard Displays for Elder Drivers

SeungJun Kim, Anind Dey, *Carnegie Mellon University, USA*
Joonhwan Lee, *Neowiz Lab, Republic of Korea*
Jodi Forlizzi, *Carnegie Mellon University, USA*

Presents guidelines for designers of automotive user interfaces that support elder drivers. Can assist in developing effective car dashboard displays that help manage attention and make information easier to interpret.

■ TECHNICAL PRESENTATIONS | 217/218/219

MEETINGS & INTERACTION SPACES

SESSION CHAIR: Wendy Ju, *Stanford University*

PAPER | Synchronous Interaction Among Hundreds: An Evaluation of a Conference in an Avatar-based Virtual Environment

Thomas Erickson, N. Sadat Shami, Wendy Kellogg, David Levine, *IBM T.J. Watson Research Center, USA*

This study of a conference in a 3D virtual world examines ways that technology succeeded or failed at supporting large-scale social interaction. Offers insights for designers and issues for theorists.

PAPER | What Did I Miss? In-Meeting Review Using Multimodal Accelerated Instant Replay (AIR) Conferencing

Sasa Junuzovic, Kori Inkpen, Rajesh Hegde, Zhengyou Zhang, John Tang, *Microsoft Research, USA*
Christopher Brooks, *University of Saskatechewan, Canada*

Describes an evaluation of accelerated instant replay mechanisms used for catching up on missed content of an on-going meeting. Can help participants catch up on missed content without disrupting the meeting.

ToCHI | Blended Interaction Spaces for Distributed Team Collaboration

Kenton O'Hara, *Microsoft Research, UK*
Jesper Kjeldskov, Jeni Paay, *Aalborg University, Denmark*

CASE STUDY | BISi: A Blended Interaction Space

Jeni Paay, Jesper Kjeldskov, *Aalborg University, Denmark*
Kenton O'Hara, *Microsoft Research, UK*

We present early iterations of the design of a Blended Interaction Space prototype, and the lessons learned from its creation.

■ TECHNICAL PRESENTATIONS | 220/221/222

ART, MUSIC & MOVEMENT

SESSION CHAIR: Amy Voida, *University of California, Irvine*

PAPER | MOGCLASS: Evaluation of a Collaborative System of Mobile Devices for Classroom Music Education of Young Children

Yinsheng Zhou, *National University of Singapore, Singapore*
Graham Percival, *Canada*
Xinxi Wang, Ye Wang, Shengdong Zhao, *National University of Singapore, Singapore*

Describes a novel and useful system and guidelines for designers of collaborative systems for classroom music education. Presents practitioners with a clear method for iterative design and system usability evaluations.

PAPER | Buzzing to Play: Lessons Learned From an In the Wild Study of Real-time Vibrotactile Feedback

Janet van der Linden, Rose Johnson, Jon Bird, Yvonne Rogers, *The Open University, UK*
Erwin Schoonderwaldt, *Institute for Music Physiology and Musicians' Medicine, Germany*

An in the wild study demonstrating how vibrotactile feedback can improve children learning to play the violin. Provides 'lessons learned' generalized for other training settings with vibrotactile feedback.

PAPER | PossessedHand: Techniques for Controlling Human Hands using Electrical Muscles Stimuli

Emi Tamaki, Takashi Miyaki, Jun Rekimoto, *The University of Tokyo, Japan*

Another contribution to HCI is that we introduce the new techniques of moving human fingers by providing electrical stimulus without any knowledge for the system setting.

NOTE | Design Interventions for Open-Air Museums: Applying and Extending the Principles of "Assembly"

Marc McLoughlin, Luigina Ciolfi, *University of Limerick, Ireland*

We present the appropriation, extension and application of the "Assembly" concept when designing for an open-air museum. It provides insights on utilising this approach for interactive exhibitions and outdoor trails.

NOTE | MoBoogie: Creative Expression Through Whole Body Musical Interaction

Megan Halpern, *Cornell University, USA*
Jakob Tholander, *Stockholm University, Sweden*
Max Evjen, *Johns Hopkins University, USA*
Stuart Davis, Andrew Ehrlich, Kyle Schustak, Eric Baumer, Geri Gay, *Cornell University, USA*

Case study of the development of a mobile smart phone application that generates music that responds to movements. Provides insight into design for creative expression, physicality, and children.

■ **TECHNICAL PRESENTATIONS | 223/224**

FACEBOOK

SESSION CHAIR: Daniela Busse, *SAP*

CASE STUDY | The Talking Poles Public Art based in Social Design

Vicki Moulder, Lorna Boschman, Ron Wakkary, *Simon Fraser University, Canada*

This case study provides insights for artists, designers, and technologists working with community-engaged media in the domain of public art.

PAPER | Life Modes in Social Media

Fatih Özenç, *Carnegie Mellon University, USA*
Shelly Farnham, *Yahoo!, USA*

Qualitative design research study exploring how to leverage natural models of social organization to improve social media experiences. Can guide designers & researchers in the process of designing social media products.

PAPER | Social Capital on Facebook: Differentiating Uses and Users

Moira Burke, Robert Kraut, *Carnegie Mellon University, USA*
Cameron Marlow, *Facebook, USA*

Longitudinal study of social capital based on (1) kinds of Facebook activities and (2) individual differences. Results inform site designers seeking to increase social connectedness and the value of those connections.

NOTE | Farmer's Tale: A Facebook Game to Promote Volunteerism

Don Sim, Xiaojuan Ma, Shengdong Zhao, Jing Ting Khoo, Swee Ling Bay, Zhenhui Jiang, *National University of Singapore, Singapore*

Presents a novel persuasive game design to promote real world volunteer activities through Facebook by embedding persuasive elements via quest systems into a popular existing game model.

NOTE | Identifying Social Capital in the Facebook Interface

Christian Yoder, Fred Stutzman, *University of North Carolina, Chapel Hill, USA*

In this paper, we examine the mechanics of interface use that produce social capital in social network sites.

■ PANEL | BALLROOM A/B

INVITED PANEL: DESIGNING FOR USER EXPERIENCE: ACADEMIA & INDUSTRY

PANELISTS:

Joseph 'Jofish' Kaye, *Nokia Research Center, USA*
Elizabeth Buie, *Luminanze Consulting, USA*
Jettie Hoonhout, *Philips Research, Netherlands*
Kristina Höök, *Mobile Life Centre, Sweden*
Virpi Roto, *University of Helsinki, Finland*
Scott Jenson, *Google, USA*
Peter Wright, *Newcastle University, UK*

This panel provides an opportunity for a spirited discussion among a cross-section of UX experts from academia and industry, bringing with them a wide variety of epistemological approaches.

■ SPECIAL INTEREST GROUP (INVITED) | 111/112

STANDARDS AND POLICY

ORGANIZERS:

Arnie Lund, *Microsoft, USA*
Jonathan Lazar, *Towson University, USA*
Volker Wulf, *University of Siegen, Germany*

■ ALT.CHI | 119/120

PLAYING WELL WITH OTHERS

SESSION CHAIR: Floyd Mueller, *CSIRO*

alt.chi | RopePlus: Bridging Distances with Social and Kinesthetic Rope Games

Lining Yao, Sayamindu Dasgupta, Nadia Cheng, Jason Spingarn-Koff, *MIT, USA*
Ostap Rudakevych, *Harvard University, USA*
Hiroshi Ishii, *MIT Media Lab, USA*

Our goals are to demonstrate a system for shared exertion gaming for children using a tangible augmented rope and explore physical and spatial implications for a remotely shared game space

alt.chi | Communiclay: A Modular System for Tangible Telekinetic Communication

Hayes Raffle, *Nokia Research Center, USA*
Ruibing Wang, *Cornell University, USA*
Karim Seada, *Nokia Research Center, USA*
Hiroshi Ishii, *MIT Media Lab, USA*

Communiclay is a modular construction system for tangible kinetic communication of gesture and form over a distance. We prototype possiblities for convergence between programmable matter and UI design.

alt.chi | The Magic Sock Drawer Project

Daniel Gooch, Leon Watts, *University of Bath, UK*

Pilot study investigating the impact of personalisation, tangibility and other design concepts on feelings of intimacy. Can help people stay connected in a fun, intimate and enjoyable way.

alt.chi | Predicting Personality with Social Media

Jennifer Golbeck, Cristina Robles, Karen Turner, *University of Maryland, USA*

Using publicly available profile information, we show that a user's personality traits can be accurately predicted with machine learning models.

alt.chi | Inventive Leisure Practices: Understanding Hacking Communities as Sites of Ssharing and Innovation

Tricia Wang, *UC San Diego, USA*
Joseph 'Jofish' Kaye, *Nokia Research Center, USA*

We present an integrated approach to studying hacking, tinkering, crafts and DIY that explores commonalities between these diverse practices.

alt.chi | Technologies and Social Learning in an Urban After-School Center

Louise Barkhuus, Robert Lecusay, *UC San Diego, USA*

The paper describes an ethnographic study of the learning ecology in an after-school program, particularly the infrastructures that contribute to the ecology.

■ TECHNICAL PRESENTATIONS | 205/206/207

HEALTH 3: ONLINE COMMUNITIES & SOCIAL INTERACTION

SESSION CHAIR: Julie Kientz, *University of Washington*

PAPER | Competing Online Viewpoints and Models of Chronic Illness

Jennifer Mankoff, *Carnegie Mellon, USA*
Kateryna Kuksenok, *University of Washington, USA*
Sara Kiesler, *Carnegie Mellon, USA*
Jennifer A. Rode, *Drexel University, USA*
Kelly Waldman, *Duke University, USA*

Analysis of a survey and interviews illustrating how chronically ill people search for and provide information and support, and online content changes their identity and understanding of their illness over time.

PAPER | Using Interface Cues in Online Health Community Boards to Change Impressions and Encourage User Contribution

Hyang-Sook Kim, S. Shyam Sundar, *The Pennsylvania State University, USA*

Extends theoretical foundations of sharing user-generated content by experimenting with interface cues indicating pedigree of users posting information and popularity of their content. Presents UI design guidelines for health boards.

PAPER | ACES: Promoting Empathy Towards Aphasia Through Language Distortion Emulation Software

Joshua Hailpern, Marina Danilevsky, Andrew Harris, Karrie Karahalios, Gary Dell, Julie Hengst, *University of Illinois at Urbana Champaign, USA*

Those without aphasia can become more empathetic and knowledgeable about aphasia by using our software, ACES, that emulates the linguistic distortions/effects of aphasia. 64-subject study with highly significant results.

NOTE | Cueing for Drooling in Parkinson's Disease

Roisin McNaney, Stephen Lindsay, Karim Ladha, Cassim Ladha, Guy Schofield, Thomas Ploetz, Nils Hammerla, Daniel Jackson, Richard Walker, Nick Miller, Patrick Olivier, *Newcastle University, UK*

We design and evaluate, with people with Parkinson's, a swallowing cueing device. Key findings include the need for aesthetic and socially acceptable devices that do not draw attention to users.

NOTE | Evaluating Swabbing: a Touchscreen Input Method for Elderly Users with Tremor

Chat Wacharamanotham, Jan Hurtmanns, Alexander Mertens, Martin Kronenbuerger, Christopher Schlick, Jan Borchers, *RWTH Aachen University, Germany*

Compares swabbing—providing touchscreen input by sliding towards a target—to tapping for users with hand tremor. Swabbing results in lower error rates and higher user satisfaction.

■ **TECHNICAL PRESENTATIONS | 208/209**

HUMAN-ROBOT INTERACTION

SESSION CHAIR: Alonso Vera, *NASA Ames Research Center*

PAPER | Direct Manipulation Through Surrogate Objects

Bum chul Kwon, Waqas Javed, Niklas Elmqvist, Ji Soo Yi, *Purdue University, USA*

A novel interaction model using surrogate representations of domain objects for increasing interaction compatibility in user interfaces. Can help designers and researchers strike a balance between direct and dialogue-based interaction.

PAPER | An Actuated Physical Puppet as an Input Device for Controlling a Digital Manikin

Wataru Yoshizaki, *NAIST AIST, Japan*
Yuta Sugiura, *Keio University, JST ERATO, Japan*
Albert C Chiou, Sunao Hashimoto, *JST ERATO, Japan*
Masahiko Inami, *Keio University, JST ERATO, Japan*
Takeo Igarashi, *The University of Tokyo, JST ERATO, Japan*
Yoshiaki Akazawa, Katsuaki Kawachi, *AIST, Japan*
Satoshi Kagami, *AIST NAIST, Japan*
Masaaki Mochimaru, *AIST, Japan*

Describes an input device for character posture design. The idea is to add actuation to a physical puppet input device. We show its feasibility with a prototype implementation and evaluations.

PAPER | Roboshop: Multi-layered Sketching Interface For Robot Housework Assignment and Management

Kexi Liu, *Louisiana State University and JST ERATO Igarashi Design Interface Project, USA*
Daisuke Sakamoto, *JST ERATO Igarashi Design Interface Project, Japan*
Masahiko Inami, *Keio University and JST ERATO Igarashi Design Interface Project, Japan*
Takeo Igarashi, *The University of Tokyo and JST ERATO Igarashi Design Interface Project, Japan*

We propose a Multi-layered-sketching interface for robot housework assignment and management. Users assign tasks to home robots through sketching on graphical interface. Multiple robots perform tasks in a coordinated way.

CASE STUDY | The Shape of Simon: Creative Design of a Humanoid Robot Shell

Carla Diana, *Smart Design, USA*
Andrea Thomaz, *Georgia Institute of Technology, USA*

This paper chronicles the interdisciplinary design process of Simon, a social robot. It focuses on the head, and serves as an example of methodology for future social robot design projects.

■ **SPECIAL INTEREST GROUP | 210**

THE FUTURE OF NATURAL USER INTERFACES

ORGANIZERS:

Jhilmil Jain, Arnold Lund, Dennis Wixon, *Microsoft, USA*

■ TECHNICAL PRESENTATIONS | 211

TAGGING

SESSION CHAIR: Jennifer Thom-Santelli, *IBM Research*

ToCHI | Semantic Imitation in Social Tagging

Wai-Tat Fu, Thomas Kannampallil, Ruogu Kang, Jibo He, *University of Illinois at Urbana-Champaign, USA*

PAPER | Examining the Impact of Collaborative Tagging on Sensemaking in Nutrition Management

Lena Mamykina, *Columbia University, USA*
Andrew Miller, Catherine Grevet, Yevgeniy Medynskiy, *Georgia Institute of Technology, USA*
Michael Terry, *University of Waterloo, Canada*
Elizabeth Mynatt, *Georgia Institute of Technology, USA*
Patricia Davidson, *Cardiovascular Care Group, USA*

We examine the impact of collaborative tagging on sensemaking in context of nutrition management. Our controlled experiment suggests that tagging has mixed impact on memory and assessment of content.

ToCHI | Personalization via Friendsourcing

Michael Bernstein, *MIT CSAIL, USA*
Desney Tan, Greg Smith, Mary Czerwinski, Eric Horvitz, *Microsoft Research, USA*

NOTE | Using Tags to Encourage Reflection and Annotation on Data During Nomadic Inquiry

Alex Kuhn, Clara Cahill, Chris Quintana, Shannon Schmoll, *University of Michigan, USA*

Presents guidelines for supporting nomadic inquiry based on a study of middle school students using a mobile multimedia annotation system. Can assist others in creating scaffolded educational tools utilizing tags.

NOTE | User Perceptions of the Role and Value of Tags

Yong-Mi Kim, Soo Young Rieh, *University of Michigan, USA*

An analysis of 45 interviews with heavy Web users reveals that user perceptions of tags differ from common assumptions held by researchers and designers of social tagging systems.

■ TECHNICAL PRESENTATIONS | 212/213/214

HCI FOR ALL

SESSION CHAIR: Michael Muller, *IBM Research*

PAPER | Towards a Feminist HCI Methodology: Social Science, Feminism, and HCI

Shaowen Bardzell, Jeffrey Bardzell, *Indiana University Bloomington, USA*

This paper explores the applicability of feminist social science to HCI's growing interest in social change. We introduce a feminist HCI methodology suited to HCI for social change.

PAPER | Out There

Alex Taylor, *Microsoft Research, UK*

Thought piece examining HCI's turn "out there" with specific focus on development/ICTD research. Presents critical discussion of disciplinary tropes and troubling use of the network as a framing device.

PAPER | How HCI Talks about Sexuality: Discursive Strategies, Blind Spots, and Opportunities for Future Research

Gopinaath Kannabiran, Jeffrey Bardzell, Shaowen Bardzell, *Indiana University Bloomington, USA*

This theory paper contributes to embodied interaction. It uses a discourse analysis of 70 papers on sexuality and HCI (SHCI) to expose gaps in and opportunities for advancing this work.

PAPER | In the Shadow of Misperception: Assistive Technology Use and Social Interactions

Kristen Shinohara, Jacob Wobbrock, *University of Washington, USA*

Interview study investigating how assistive technology use is affected by social and professional contexts and interactions. Provides an understanding of how design of assistive technology affects access and use.

■ TECHNICAL PRESENTATIONS | 215/216

EMOTIONAL STATES

SESSION CHAIR: Darren Gergle, *Northwestern University*

PAPER | Identifying Emotional States using Keystroke Dynamics

Clayton Epp, Michael Lippold, Regan Mandryk, *University of Saskatchewan, Canada*

We classify levels of various emotional states using the typing rhythms of users (gathered on a standard keyboard through a field study) with accuracies ranging from 77 to 88%.

PAPER | PAM: A Photographic Affect Meter For Frequent, In Situ Measurement of Affect

John Pollak, Phil Adams, Geri Gay, *Cornell University, USA*

Presents the design and validation of a novel measure of affect, intended for deployment on mobile computing devices. the measure correlates with PANAS, a widely accepted and utilized scale.

PAPER | Affective Computational Priming and Creativity

Sheena Lewis, *Northwestern University, USA*
Mira Dontcheva, *Adobe Systems, USA*
Elizabeth Gerber, *Northwestern University, USA*

This research introduces psychological research on affect to creativity support tool research. Our study demonstrates the effectiveness of affective computational priming and provides design implications for creativity support tools.

NOTE | Upset Now?: Emotion Contagion in Distributed Groups

Jamie Guillory, Jason Spiegel, Molly Drislane, Benjamin Weiss, Walter Donner, Jeff Hancock, *Cornell University, USA*

Highlights the importance of the intensity of specific emotions in understanding how emotions impact text-based communication in groups. Experiment examines the transfer of negative emotion in online groups.

NOTE | Emotion Regulation for Frustrating Driving Contexts

Helen Harris, Clifford Nass, *Stanford University, USA*

Presents a simulator-based study of the effectiveness of a voice interface in implementing an emotion regulation strategy to improve driver attitudes and behavior.

■ **TECHNICAL PRESENTATIONS | 217/218/219**

IDENTITY & VIRTUAL SOCIAL INTERACTIONS

SESSION CHAIR: Kori Inkpen, *Microsoft Research*

PAPER | Introverted Elves & Conscientious Gnomes: The Expression of Personality in World of Warcraft

Nick Yee, Nicolas Ducheneaut, Les Nelson, *PARC, USA*
Peter Likarish, *University of Iowa, USA*

Quantitative analysis of longitudinal behavioral metrics in an online game examining how real world personality is expressed in virtual environments. Illustrates how virtual behaviors can be used to infer personality.

PAPER | Starcraft from the Stands: Understanding the Game Spectator

Gifford Cheung, Jeff Huang, *University of Washington, USA*

We contribute nine personas of spectatorship; we describe how different stakeholders affect the spectator experience; and we infer what makes the game entertaining, forming a theory of information asymmetry.

NOTE | Do Men Heal More When in Drag? Conflicting Identity Cues Between User and Avatar

Nick Yee, Nicolas Ducheneaut, *PARC, USA*
Mike Yao, *City University of Hong Kong, Hong Kong*
Les Nelson, *PARC, USA*

Quantitative analysis of behavioral outcomes in an online game where physical and virtual identity are in conflict. Provides insights into avatar-mediated interactions.

NOTE | Is the Media Equation a Flash in the Pan? The Durability and Longevity of Social Responses to Computers

Laura Pfeifer, Timothy Bickmore, *Northeastern University, USA*

A longitudinal study examining the durability of Media Equation effects as they relate to different interfaces. Can assist designers and researchers in understanding how Media Equation effects change over time.

PAPER | What Drives Customization? Control or Identity?

Sampada Marathe, S. Shyam Sundar, *The Pennsylvania State University, USA*

This paper provides insight on the intertwined relationship between two psychological gratifications for customization, sense of identity and sense of control, and offers implications for design of interactive customizable interfaces.

■ **TECHNICAL PRESENTATIONS | 220/221/222**

GESTURES, BODY & TOUCH

SESSION CHAIR: Steve Benford, *University of Nottingham*

PAPER | Your Noise is My Command: Sensing Gestures Using the Body as an Antenna

Gabe Cohn, *Microsoft Research, University of Washington, USA*
Daniel Morris, *Microsoft Research, USA*
Shwetak Patel, *Microsoft Research, University of Washington, USA*
Desney Tan, *Microsoft Research, USA*

We use the body as a receiving antenna and leverage ambient electromagnetic noise for gestural interaction on uninstrumented surfaces. We demonstrate robust classification of several classes of in-home gestures.

PAPER | Sensor Synaesthesia: Touch in Motion, and Motion in Touch

Ken Hinckley, *Microsoft Research, USA*
Hyunyoung Song, *University of Maryland, USA*

Explores multimodal touch + motion-sensing gestures for mobile devices. Discusses the design space of touch + motion by articulating its properties and by charting a taxonomy of related techniques.

PAPER | Data Miming: Inferring Spatial Object Descriptions from Human Gesture

Christian Holz, *Hasso Plattner Institute, Germany*
Andrew Wilson, *Microsoft Research, USA*

Introduces a system to derive spatial objects from a user's descriptions through gesture. Uses a depth camera to capture gestures and create a 3D representation.

NOTE | Understanding Naturalness and Intuitiveness in Gesture Production: Insights for Touchless Gestural Interfaces

Sukeshini Grandhi, Gina Joue, Irene Mittelberg, *RWTH Aachen University, Germany*

Presents guidelines for designers of touchless gestural interfaces based on a user study of gesture production in communicating transitive actions. Can assist in developing effective natural and intuitive gesture vocabulary.

NOTE | The Impact on Musculoskeletal System During Multitouch Tablet Interactions

Cecil Lozano, Devin Jindrich, Kanav Kahol, *Arizona State University, USA*

Describes an evaluation methodology of the impact of multitouch interaction on the musculoskeletal system and presents quantification of some interaction factors. Can assist designers in creating ergonomically safer interactions.

■ **TECHNICAL PRESENTATIONS | 223/224**

POINTING 1

SESSION CHAIR: Emmanuel Pietriga, *INRIA; Univ. Paris-Sud & CNRS*

PAPER | TorusDesktop: Pointing Via the Backdoor is Sometimes Shorter

Stéphane Huot, *Université Paris-Sud, CNRS & INRIA, France*
Olivier Chapuis, *CNRS, Université Paris-Sud & INRIA, France*
Pierre Dragicevic, *INRIA, France*

Describes the design and evaluation of TorusDesktop, a pointing technique based on cursor-wrapping. TorusDesktop can significantly improve pointing performance for targets distant of more than 80% the screen size.

PAPER | Comet and Target Ghost: Techniques for Selecting Moving Targets

Khalad Hassan, *University of Manitoba, Canada*
Tovi Grossman, *Autodesk Research, Canada*
Pourang Irani, *University of Manitoba, Canada*

Comet and Target Ghost are two novel techniques for assisting the selection of moving targets. Results of two experiments show the value of these techniques in comparison to existing cursor-based enhancements.

PAPER | Acquiring and Pointing: An Empirical Study of Pen-Tilt-Based Interaction

Yizhong Xin, *Kochi University of Technology, Japan*
Xiaojun Bi, *University of Toronto, Canada*
Xiangshi Ren, *Kochi University of Technology, Japan*

Presents the human ability to control pen tilt and the implications of use for designers of pen-based interfaces based on an empirical study. Can assist in designing effective pen-tilt-based interactions.

NOTE | On the Costs of Multiple Trajectory Pointing Methods

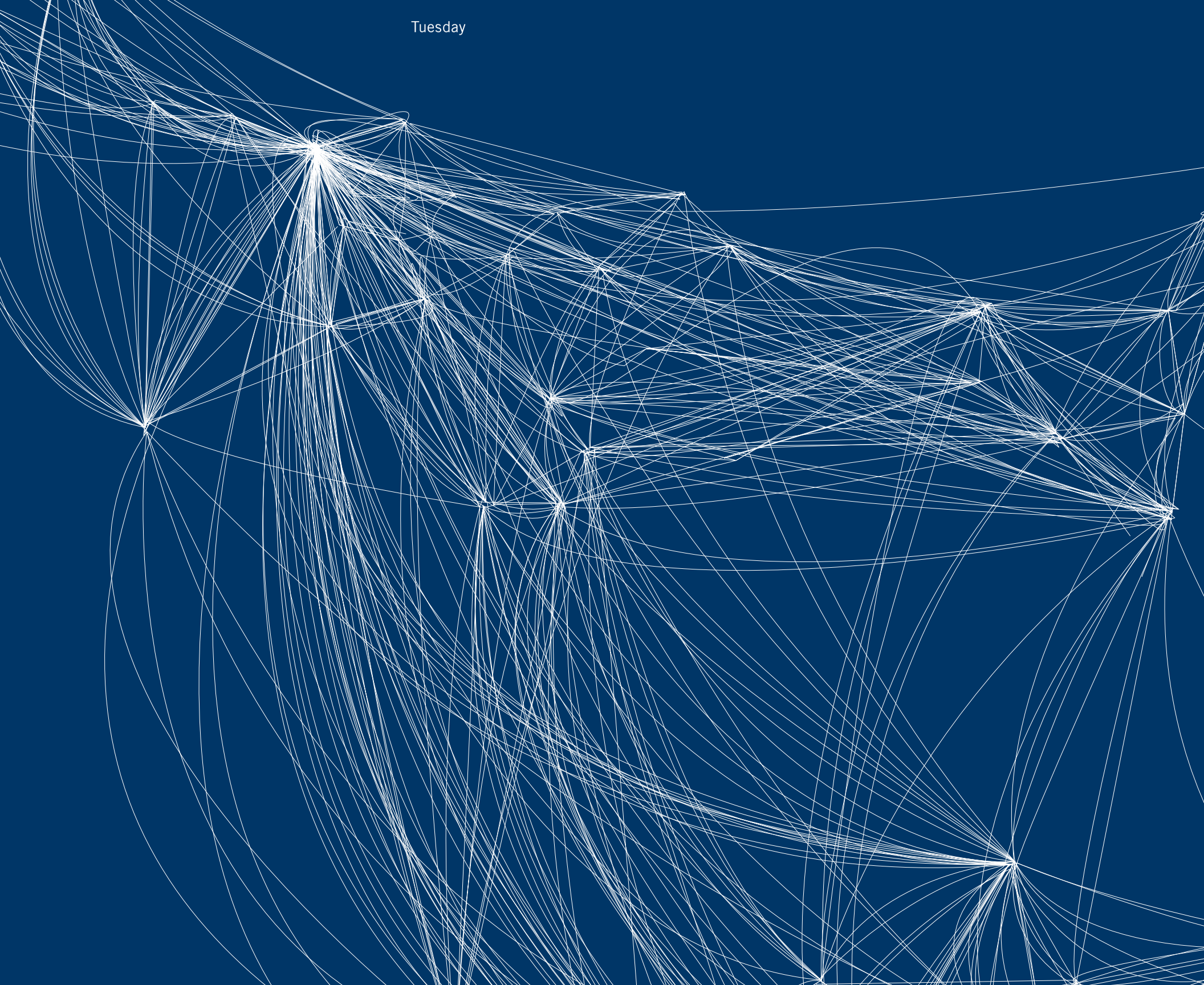
Philip Quinn, Andy Cockburn, *University of Canterbury, New Zealand*
Kari-Jouko Räihä, *University of Tampere, Finland*
Jerome Delamarche, *Polytech Paris-Sud, France*

Demonstrates that enhanced pointing techniques offering multiple target trajectories can incur significant limitations due to search/decision time costs. Describes a methodology and study of cursor warping and Ninja cursors.

NOTE | Cursor Relocation Techniques to Help Older Adults Find 'Lost' Cursors

Nic Hollinworth, Faustina Hwang, *University of Reading, UK*

Describes how a standard computer mouse was enhanced with a touch sensor and used to help make locating the mouse cursor easier for older adult computer users.


Tuesday

= 10 minutes (Note, short Case Study) = 12 minutes (alt.chi) = 20 minutes (Paper, ToCHI, long Case Study) = unscheduled time

	8:00–8:45	9:00–10:00	11:00–12:20	14:00–15:20	16:00–17:20
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111/ 112		**SIG** Designing for Whole Systems and Services in Heathcare Page 40	**Panel** Facebook for Health Page 44	**SIG** Geographic HCI Page 49	**SIG** Applying the NSF Broader Impacts Criteria to HCI Research Page 53
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223/ 224		**alt.chi** ...and I Just Can't Take it Anymore! Page 43	**Technical Presentations** Expression & Perception Page 48	**Technical Presentations** Design Materiality Page 52	**Technical Presentations** Performing Arts Page 56

Technical Presentations include Paper, Note, Case Study and ToCHI presentations

Exhibits	Interactivity	Posters	Special Events / Taste of CHI
Commons (Ballroom C/D) 10:00 - 18:00	**Interactivity 1** Commons (Ballroom C/D) 10:00 - 11:00 15:20 - 16:00 **Interactivity 2** (Rm 202/203/204) 10:00 - 11:00 15:20 - 16:00 17:30 - 20:00	**WIPs 100-299** (Ballroom Foyer) **Student Design Competition** (Registration Foyer)	**Interact with Poster Authors** (Ballroom and Registration Foyer) 10:00 - 11:00 **Interactivity Performance:** Humanaquarium (Foyer Level 2) 17:30 - 20:00 **CHI Video Showcase** (Ballroom A/B) 17:30 - 18:30 **Interactivity Performance:** What's a Body Know? (Opens Video Night) **Job Fair** Commons (Ballroom C/D) 17:30 - 19:30 **Buxton Collection** (Rm 201) 10:00 - 20:00

CHI MADNESS | BALLROOM A/B

8:00-8:45

SESSION CHAIRS:
Mira Dontcheva, *Adobe Systems*
Matt Jones, *Swansea University*
Max L. Wilson, *Swansea University*

CHI Madness returns to give everyone a lightning speed overview of the day's program.

■ **PANEL | BALLROOM A/B**

USER EXPERIENCE MANAGEMENT POST MERGERS AND ACQUISITIONS

PANELISTS

Janaki Kumar, Dan Rosenberg, Michael Arent, *SAP Labs, USA*
Anna Wichansky, Madhuri Kolhatkar, *Oracle, USA*
Esin Kiris, Russell Wilson, *CA, USA*
Arnold Lund, *Microsoft, USA*

We welcome management, practitioners and academics, experienced or interested in M&A's impact on UX. We encourage audience participation in the discussion to foster a rich interaction on this important trend.

■ **SPECIAL INTEREST GROUP | 111/112**

DESIGNING FOR WHOLE SYSTEMS AND SERVICES IN HEALTHCARE

ORGANIZERS

Peter Jones, *Redesign OCAD University, Canada*
David Cronin, *Smart Design, USA*
Dean Karavite, *Children's Hospital of Philadelphia, USA*
Ross Koppel, *University of Pennsylvania, USA*
Prudence Dalrymple, *Drexel University, USA*
Kai Zheng, *University of Michigan, USA*
Michelle Rogers, *Drexel University, USA*
Bob Schumacher, *User Centric, USA*

■ **TECHNICAL PRESENTATIONS | 205/206/207**

AMBIENT & PERIPHERAL COMPUTING

SESSION CHAIR: Loren Terveen, *University of Minnesota*

PAPER | Enhancing Interactional Synchrony with an Ambient Display

Madeline Balaam, *Newcastle University, UK*
Geraldine Fitzpatrick, *Technical University of Vienna, Austria*
Judith Good, Eric Harris, *University of Sussex, UK*

Presents a study exploring the role of ambient displays in amplifying nonverbal aspects of face-to-face communication. Examines the ethics of such ambient displays, and sets out future directions for research.

PAPER | Issues in Evaluating Ambient Displays In the Wild: Two Case Studies

William Hazlewood, Erik Stolterman, Kay Connelly, *Indiana University, USA*

Analysis of two case studies intended to derive specific issues that hinder in-depth evaluations of in-situ ambient display installations.

NOTE | Does MoodyBoard Make Internet Use more Secure? Evaluating an Ambient Security Visualization Tool

Alexander De Luca, Bernhard Frauendienst, Max-Emanuel Maurer, *University of Munich, Germany*
Julian Seifert, *University of Duisburg-Essen, Germany*
Doris Hausen, Niels Kammerer, Heinrich Hussmann, *University of Munich, Germany*

Presents an evaluation of MoodyBoard, a keyboard that gives ambient security notifications when browsing the Internet. Results show that MoodyBoard users are significantly less likely to fall for phishing.

NOTE | Peripheral Computing During Presentations: Perspectives on Costs and Preferences

Shamsi Iqbal, Jonathan Grudin, Eric Horvitz, *Microsoft Research, USA*

We examine perceptions of costs and benefits of performing peripheral computing tasks by audience members while attending presentations, looking at perspectives of those who present and those who attend.

■ TECHNICAL PRESENTATIONS | 208/209

MUSEUMS & PUBLIC EXHIBITIONS

SESSION CHAIR: Jacquelyn Martino, *IBM Research*

PAPER | An Exploratory Study of Input Modalities for Mobile Devices Used with Museum Exhibits

Priscilla Jimenez Pazmino, *University of Illinois at Chicago, USA*
Leilah Lyons, *University of Illinois at Chicago, USA*

Guidelines for designers of Opportunistic UIs based on an experimental study of input modalities for mobile devices. Extends the definition of consistency to cover new categories relevant to ubiquitous computing.

CASE STUDY | GroupAixplorer: An Interactive Mobile Guide for Small Groups

Martin Wermers, Gero Herkenrath, Jan Borchers,
RWTH Aachen University, Germany

This paper introduces an interactive collaborative quest game for small groups on a mobile guide system. It demonstrates means to encourage and not hinder interaction among the system's users.

CASE STUDY | Art Loop Open: Designing for the Intersection of Art and Technology in an Urban Public Exhibition

Anijo Mathew, *Illinois Institute of Technology, USA*

Case Study describing the design of a city-wide art exhibition with a cutting edge technologically mediated experience. Can help interaction designers in understanding the design process involved in a large informatics project with different decision making entities.

■ SPECIAL INTEREST GROUP (INVITED) | 210

SUSTAINABILITY COMMUNITY: FRAMEWORK & AGENDA

ORGANIZERS

Azam Khan, *Autodesk Research, Canada*
Eli Blevis, *Indiana University, USA*
Daniela Busse, *SAP, USA*

■ TECHNICAL PRESENTATIONS | 211

EVERYDAY INFORMATION MANAGEMENT

SESSION CHAIR: David McDonald, *University of Washington*

PAPER | "I Lie to Myself that I Have Freedom in My Own Schedule": Productivity Tools and Experiences of Busyness

Gilly Leshed, Phoebe Sengers, *Cornell University, USA*

Field study findings examine how planners, calendars, to-do lists, and other productivity tools are embedded in everyday experiences of American individuals in their work, home, and leisure pursuits.

PAPER | Homebrew Databases: Complexities of Everyday Information Management in Nonprofit Organizations

Amy Voida, Ellie Harmon, Ban Al-Ani, *University of California, Irvine, USA*

Describes a qualitative study characterizing the assemblages of information management systems that volunteer coordinators create to satisfice their information management needs. Findings suggest research trajectories for creating human-centered databases.

PAPER | How a Freeform Spatial Interface Supports Simple Problem Solving Tasks

Eser Kandogan, *IBM Almaden Research Center, USA*
Juho Kim, *IBM Almaden Research Center, Stanford, MIT, USA*
Thomas Moran, *IBM Almaden Research Center, USA*
Pablo Pedemonte, *IBM Argentina, Argentina*

Describes a user study to examine the role of space and trade-offs between freeform and structured interaction styles in problem solving tasks. Freeform interaction can improve task performance and memory recall.

■ TECHNICAL PRESENTATIONS | 212/213/214

LOW-COST ICT4D

SESSION CHAIR: Ed Cutrell, *Microsoft Research*

PAPER | Utilizing Multimedia Capabilities of Mobile Phones to Support Teaching in Schools in Rural Panama

Elba del Carmen Valderrama Bahamondez, Christian Winkler,
University Duisburg-Essen, Germany
Albrecht Schmidt, *University of Stuttgart, Germany*

Based on surveys, interviews, and field work in Panama, we report on how touch-screen mobile phones with multimedia capabilities can be successfully used as educational tools in rural multigrade schools.

PAPER | Infrastructures for Low-cost Laptop Use in Mexican Schools

Ruy Cervantes, Mark Warschauer, Bonnie Nardi, Nithya Sambasivan, *Univerisity of California, Irvine, USA*

We conducted a field study of Mexican elementary schools that deployed the XO or ClassmatePC. Educational outcomes of the laptops depended on the schools' socio-technical infrastructures, rather than the laptop design.

NOTE | Utilizing DVD Players as Low-Cost Offline Internet Browsers

Gaurav Paruthi, William Thies, *Microsoft Research India, India*

Describes how to use ordinary TVs and DVD players to browse offline Internet content. Enables communities in the developing world to access Wikipedia and other resources at very low cost.

■ **TECHNICAL PRESENTATIONS | 215/216**

PREDICTING & MODELING HUMAN BEHAVIORS

SESSION CHAIR: James Fogarty, *University of Washington*

PAPER | Importance-Driven Compositing Window Management

Manuela Waldner, Markus Steinberger, *Graz University of Technology, Austria*
Raphael Grasset, *University of Canterbury, New Zealand*
Dieter Schmalstieg, *Graz University of Technology, Austria*

Importance-driven compositing optimizes the spatial window layout for maximum visibility and interactivity of occluded content. We present novel window manager functions to improve the access to occluded window content.

PAPER | Content and Hierarchy in Pixel-Based Methods for Reverse Engineering Interface Structure

Morgan Dixon, Daniel Leventhal, James Fogarty, *University of Washington, USA*

Presents pixel-based methods for interpreting interface content and hierarchy. Enables new ways to modify existing graphical interfaces independent of their underlying implementation.

NOTE | Client TouchPoint Modeling: Understanding Client Interactions in the Context of Service Delivery

Aqueasha Martin, *Clemson University, USA*
Yolanda Rankin, *IBM Research Almaden, USA*
Joe Bolinger, *The Ohio State University, USA*

Describes the design process for conceptualizing the methodology and developing the appropriate technology to enable geographically distributed service delivery team members to strategically manage a customer account.

NOTE | Using Predictive Human Performance Models to Inspire and Support UI Design Recommendations

Bonnie John, *IBM T. J. Watson Research Center, USA*

Demonstrates that a Keystroke-Level Modeling tool, CogTool, enables even inexperienced UI designers to make well-grounded recommendations for improving interface usability in addition to reliable estimates of skilled execution time.

■ **TECHNICAL PRESENTATIONS | 217/218/219**

DEATH & BEREAVEMENT

SESSION CHAIR: Gillian Hayes, *University of California, Irvine*

PAPER | Matters of Life and Death: Locating the End of Life in Lifespan-Oriented HCI Research

Michael Massimi, *University of Toronto, Canada*
William Odom, *Carnegie Mellon University, USA*
Richard Banks, *Microsoft Research Cambridge, UK*
David Kirk, *University of Nottingham, UK*

Extends the HCI tradition of lifespan-oriented research to include the end of life. Provides a mapping of current work in this area, with suggestions for future research and practice.

NOTE | I Said Your Name in an Empty Room: Grieving and Continuing Bonds on Facebook

Emily Getty, Jessica Cobb, Meryl Gabeler, Christine Nelson, Ellis Weng, Jeffrey Hancock, *Cornell University, USA*

A linguistic analysis of posts on profiles before and after a user's death reveals that people use Facebook posts for front stage grieving and to continue their bond with the deceased.

PAPER | Dealing with Death in Design: Developing Systems for the Bereaved

Michael Massimi, Ronald Baecker, *University of Toronto, Canada*

Describes the results of fieldwork with bereaved parents and bereavement professionals in order to better articulate how technologies for the bereaved might be more sensitively designed.

■ SIGCHI AWARD TALK (INVITED) | 220/221/222

FILLING IN THE H IN HCI

Terry Winograd, *Stanford University, USA*
Lifetime Research Award

Over the decades since the original framing of HCI as dealing with the "human information processor" we have seen an ongoing expansion of the field's perspective on the human side of the interaction. The human is physically embodied, non-rational, emotional, and social. An individual human's activity is part of collective and interactive groups. Every human is enmeshed in a specific economic and political environment as well as a global environment. Each time we broaden our view, we raise new challenges and opportunities for designing interactions with computersand information devices.

Terry will reflect on the ways in which the field has introduced new dimensions of humanness over the years, and how that has shaped the research agenda and the kinds of designs we create. Terry will speculate on where this may go in the future, and how we might expect to see HCI evolving further.

■ ALT.CHI | 223/224

ALT.CHI: ... AND I JUST CAN'T TAKE IT ANYMORE!

SESSION CHAIR: Patrick Baudisch, *Hasso Plattner Institute*

alt.chi | The Trouble with Social Computing Systems Research

Michael Bernstein, *MIT, USA*
Mark Ackerman, *University of Michigan, USA*
Ed Chi, *Google, USA*
Robert Miller, *MIT, USA*

What is the future of systems research in social computing? We tackle the field's challenges of misaligned methodological incentives, overreaching evaluation expectations, double standards, and relevance compared to industry.

alt.chi | Form and Materiality in Interaction Design: A New Approach to HCI

Heekyoung Jung, Erik Stolterman, *Indiana University, USA*

This paper conceptualizes form and materiality in interaction design. Based on the conceptualization, four types of interactive forms and corresponding form-making strategies are discussed as a new approach to HCI.

alt.chi | How Can We Support Users' Preferential Choice?

Anthony Jameson, *DFKI, Germany*
Silvia Gabrielli, *CREATE-NET, Italy*
Per Ola Kristensson, *University of Cambridge, UK*
Katharina Reinecke, *Harvard University, USA*
Federica Cena, Cristina Gena, Fabiana Vernero, *University of Turin, Italy*

alt.chi | Of Course I Wouldn't Do That in Real Life: Advancing the Arguments for Increasing Realism in HCI Experiments

Letitia Lew, Truc Nguyen, Solomon Messing, Sean Westwood, *Stanford University, USA*

Explores how unrealistic elements in appearance, content, task and setting of an experiment can undermine its validity. Helps researchers determine whether they need to improve the realism of their experiments.

alt.chi | GoSlow: Designing for Slowness, Reflection and Solitude

Justin Cheng, Akshay Bapat, Gregory Thomas, Kevin Tse, Nikhil Nawathe, Jeremy Crockett, Gilly Leshed, *Cornell University, USA*

Describes a mobile application developed to encourages disconnection from others, introspective reflection, slowing down and stress reduction with minimal intervention. Challenges the "do-more-in-less-time" orientation in HCI.

■ SPECIAL EVENT | BALLROOM A/B

FESTSCHRIFT PANEL IN HONOR OF STUART K. CARD

Ed Chi, *Google, USA*
Peter Pirolli, *PARC, USA*
Bonnie John, *Carnegie Mellon University, USA*
Judith Olson, *University of California, Irvine, USA*
Dan Russell, *Google, USA*
Tom Moran, *IBM, USA*

This panel will recognize and celebrate the lifetime work of Stuart K. Card, who retired from PARC in 2010. As one of the fathers of the HCI field, Stu's work greatly influences the field in a deep and profound way. Using a model-driven approach, his work on Fitts' law, the mouse, GOMS theory, Model Human Processor, Information Visualization, and Information Foraging have impacted how we do HCI research today. For his contributions to the field, in 2000 he was awarded the CHI Lifetime Achievement Award from SIGCHI, and became an ACM Fellow. In 2001 he was elected to the CHI Academy. In 2007, he was elected to the National Academy of Engineering, and was awarded The Franklin Institute's Bower Award and Prize for Achievement in Science.

At this panel, which will function like a shortened Festschrift, panelists will discuss how Stu's work have influenced the field, toast his accomplishments, and discuss the future of HCI.

■ PANEL | 111/112

FACEBOOK FOR HEALTH: OPPORTUNITIES AND CHALLENGES FOR DRIVING BEHAVIOR CHANGE

PANELISTS

Margaret Morris, Sunny Consolvo, *Intel, USA*
Sean Munson, *University of Michigan, USA*
Kevin Patrick, *University California San Diego, USA*
Janice Tsai, *Microsoft, USA*
Adam Kramer, *Facebook, USA*

This panel explores the potential of Facebook to motivate behavior change and improve public health. We discuss ethography and public health research, health applications that leverage social influence, and privacy.

■ TECHNICAL PRESENTATIONS | 205/206/207

NON-FLAT DISPLAYS

SESSION CHAIR: Xiang Cao, *Microsoft Research*

PAPER | Touch Input on Curved Surfaces

Anne Roudaut, Henning Pohl, Patrick Baudisch, *Hasso Plattner Institute, Germany*

Examines touch input on curved surfaces and generalizes the concept of error offset and spread.

PAPER | Audience Behavior Around Large Interactive Cylindrical Screens

Gilbert Beyer, *University of Munich, Germany*
Florian Alt, *University of Duisburg-Essen, Germany*
Jörg Müller, *Deutsche Telekom Laboratories, Germany*
Albrecht Schmidt, *University of Stuttgart, Germany*
Karsten Isakovic, Stefan Klose, Manuel Schiewe, Ivo Haulsen, *Fraunhofer FIRST, Germany*

Presents an interactive cylindrical public display and a user studycomparing it to a flat display with equal content. Findings can helpcreating new interactive experiences with non-planar public displays.

PAPER | MotionBeam: A Metaphor for Character Interaction with Handheld Projectors

Karl Willis, *Carnegie Mellon University, Disney Research, USA*
Ivan Poupyrev, Takaaki Shiratori, *Disney Research, USA*

Describes a metaphor for character interaction with handheld projectors and the implementation of a prototype system. Can assist the development of handheld projector based interfaces.

PAPER | 3D Projection on Physical Objects: Design Insights from Five Real Life Cases

Peter Dalsgaard, Kim Halskov, *Aarhus University, Denmark*

We discuss design insights concerning 3D projection on physical objects: new potentials for well-known 3D effects, dynamics between digital world and physical world, and relations between object, content and context.

■ TECHNICAL PRESENTATIONS | 208/209

DESIGN THEORY

SESSION CHAIR: Steven Dow, *Stanford University*

PAPER | The New Good: Exploring the Potential of Philosophy of Technology to Contribute to Human-Computer Interaction

Daniel Fallman, *Interactive Institute, Sweden*

Extends experience-based approaches by offering theories from philosophy of technology. Can assist designers in dealing with issues of values and ethics.

PAPER | Understanding Interaction Design Practices

Elizabeth Goodman, *University of California, Irvine, USA*
Erik Stolterman, *Indiana University, USA*
Ron Wakkary, *Simon Fraser University, Canada*

Argues that research aimed at influencing interaction design must begin by studying current design practice. Describes methodological and theoretical changes to better integrate HCI research with interaction design practices.

ToCHI | Complex Interaction

Lars-Erik Janlert, *Umeå University, Sweden*
Erik Stolterman, *Indiana University, Bloomington, USA*

ToCHI | Indexicality: Understanding Mobile Human-Computer Interaction in Context

Jesper Kjeldskov, Jeni Paay, *Aalborg University, Denmark*

■ **SPECIAL INTEREST GROUP (INVITED) | 210**

GAMES AND ENTERTAINMENT COMMUNITY: TOWARDS FORMING A ROBUST AND ONGOING COMMUNITY

ORGANIZERS

Regina Bernhaupt, *IRIT, France*
Katherine Isbister, *NYU Polytechnic Institute, USA*

■ **TECHNICAL PRESENTATIONS | 211**

MICROBLOGGING BEHAVIOR

SESSION CHAIR: Mor Naaman, *Rutgers University*

PAPER | "Voluntweeters": Self-Organizing by Digital Volunteers in Times of Crisis

Kate Starbird, Leysia Palen, *University of Colorado, Boulder, USA*

This empirical study describes the behaviors of "digital volunteers" during the aftermath of the 2010 Haiti earthquake. We relate these behaviors to long-standing theory on convergence and self-organizing during disaster.

PAPER | Social Media Ownership: Using Twitter as a Window onto Current Attitudes and Beliefs

Catherine C. Marshall, *Microsoft Research, USA*
Frank Shipman, *Texas A&M University, USA*

Presents the results of a survey to probe attitudes about who can save, share, publish, and remove tweets from a Twitter feed. Explores issues associated with content ownership, archiving, and reuse.

PAPER | Fragile Online Relationship: A First Look at Unfollow Dynamics in Twitter

Haewoon Kwak, Hyunwoo Chun, Sue Moon, *KAIST, Republic of Korea*

A quantitative and qualitative analysis of the behavior known as 'unfollow' of 1.2 million Korean-speaking Twitter users. Results outlined the characteristics of the unfollow behavior and motivation behind unfollow.

NOTE | The Impact of Network Structure on Breaking Ties in Online Social Networks: Unfollowing on Twitter

Funda Kivran-Swaine, Priya Govindan, Mor Naaman, *Rutgers University, USA*

Unfollowed? Defriended? We investigate the breaking of ties in the social network of Twitter. Building on sociological concepts, we show how network structure alone influences unfollowing activity.

NOTE | Computing Political Preference among Twitter Followers

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

We present a method for determining the political preferences of twitter audiences based on their following habits, and discuss the generalizability to understanding preferences in other domains.

■ **TECHNICAL PRESENTATIONS | 212/213/214**

INTER-CULTURAL INTERACTION

SESSION CHAIR: Susan Fussell, *Cornell University*

PAPER | Online Contribution Practices in Countries that Engage in Internet Blocking and Censorship

Irina Shklovski, Nalini Kotamraju, *IT University of Copenhagen, Denmark*

Describes people's online contribution practices in contexts where government actively blocks access to or censors the Internet. Highlights the importance of considering macro-level social contexts for studying user-generated content.

PAPER | Real-time Collaborative Editing Behavior in U.S. and Japanese Distributed Teams

Lauren Scissors, *Northwestern University, USA*
N. Sadat Shami, *IBM T.J. Watson Research Center, USA*
Tatsuya Ishihara, *IBM Tokyo Research Laboratory, Japan*
Steven Rohall, *IBM T.J. Watson Research Center, USA*
Shin Saito, *IBM Tokyo Research Laboratory, Japan*

Describes qualitative user study of real-world Japanese and U.S. distributed work teams who used LiveDeck, a real-time collaborative editing tool. Can inform design of collaborative tools across different countries.

NOTE | Cultural Differences on Visual Self-Presentation through Social Networking Site Profile Images

Chen Zhao, *Microsoft Research Asia, China*
Gonglue Jiang, *Harvard University, USA*

This study examines whether self-presentation on SNSs is related to national culture and how forms of self-presentation differ between American and Chinese users.

NOTE | MonoTrans2: A New Human Computation System to Support Monolingual Translation

Chang Hu, Benjamin Bederson, Philip Resnik, Yakov Kronrod, *University of Maryland, USA*

A human-computation-based system to translate by people speaking only one language. Can assist development of human computation systems, especially translation systems.

NOTE | Culture or Fluency? Unpacking Interactions Between Culture and Communication Medium

Leslie Setlock, Susan Fussell, *Cornell University, USA*

This lab study explores the relationship between fluency and culture in a CMC collaboration. Results can inform design of technology to facilitate multicultural collaboration and advance theory on cross-cultural mediated communication.

■ **TECHNICAL PRESENTATIONS | 215/216**

EYE TRACKING

SESSION CHAIR: Melanie Fitzgerald, *Google*

PAPER | Skim Reading by Satisficing: Evidence from Eye Tracking

Geoffrey Duggan, Stephen Payne, *University of Bath, UK*

Eyetracking data support the idea that skim readers use a satisficing strategy to focus on the important parts of expository text. Implications are sketched for design of skimmable on-line texts.

PAPER | Older Web Users' Eye Movements: Experience Counts

Robin Hill, *University of Edinburgh, UK*
Anna Dickinson, John Arnott, Peter Gregor, Louise McIver, *University of Dundee, UK*

Demonstrates that older people are not homogeneous in eye-movement behaviour. Can assist developers and researchers in studying and interpreting eye-tracking data from older adults with different levels of computer experience.

PAPER | Retrospective Think-Aloud Method: Using Eye Movements as an Extra Cue for Participants' Verbalizations

Sanne Elling, Leo Lentz, *Utrecht University, The Netherlands*
Menno de Jong, *University of Twente, The Netherlands*

Comparison between traditional retrospective think-aloud protocols and a variant with eye movements. Provides relevant knowledge that can be used to further improve the quality of usability testing.

NOTE | Triggered Think-Aloud Protocol: Using Eye Tracking to Improve Usability Test Moderation

Beverly Freeman, *PayPal, USA*

Describes a concurrent think-aloud protocol that uses eye tracking data to inform usability moderation in real time. Can improve when and how probes are administered while minimally influencing task behavior.

■ TECHNICAL PRESENTATIONS | 217/218/219

FAMILIES

SESSION CHAIR: Shaowen Bardzell, *Indiana University*

PAPER | Learning Patterns of Pick-ups and Drop-offs to Support Busy Family Coordination

Scott Davidoff, Brian Ziebart, John Zimmerman, Anind Dey, *Carnegie Mellon University, USA*

Demonstrates that family transportation routines can be learned using mobile phone GPS. Discusses how learned routine models can give calendaring, reminder, awareness and location systems new capabilities.

PAPER | Mediated Parent-Child Contact in Work-Separated Families

Svetlana Yarosh, Gregory Abowd, *Georgia Institute of Technology, USA*

Describes an interview investigation of how parents and young children respond to separation due to work, including the strategies they use to stay in touch and the limitations of these strategies.

PAPER | Hello, is Grandma There? Let's Read! StoryVisit: Family Video Chat and Connected E-Books

Hayes Raffle, *Nokia Research Center, USA*
Glenda Revelle, *University of Arkansas, USA*
Koichi Mori, Rafael Ballagas, Kyle Buza, Hiroshi Horii, Joseph 'Jofish' Kaye, *Nokia Research Center, USA*
Kristin Cook, *Sesame Workshop, USA*
Natalie Freed, *Nokia Research Center, MIT Media Lab, USA*
Janet Go, Mirjana Spasojevic, *Nokia Research Center, USA*

StoryVisit combines video conferencing and connected children's e-books. 200+ people in 60+ families used StoryVisit in their homes for 4-6 weeks; videochat durations increased 5-7x compared to normal videochat.

PAPER | Family Portals: Connecting Families Through A Multifamily Media Space

Tejinder K. Judge, *Virginia Tech, USA*
Carman Neustaedter, *Simon Fraser University, Canada*
Steve Harrison, *Virginia Tech, USA*
Andrew Blose, *Kodak Research Laboratories, USA*

This paper describes the design and evaluation of a multifamily media space.

■ TECHNICAL PRESENTATIONS | 220/221/222

SEARCH & INFORMATION SEEKING

SESSION CHAIR: Jaime Teevan, *Microsoft Research*

PAPER | The Information Flaneur: A Fresh Look at Information Seeking

Marian Doerk, Sheelagh Carpendale, Carey Williamson, *University of Calgary, Canada*

We explore information seeking from human-centred perspectives and propose a poetic persona and interaction schema, which can help researchers and designers shift focus from information deficiencies to positive information practices.

PAPER | No Clicks, No Problem: Using Cursor Movements to Understand and Improve Search

Jeff Huang, *University of Washington, USA*
Ryen White, Susan Dumais, *Microsoft Research, USA*

We present a scalable approach to capture and analyze cursor movements during Web search, and show how these data can be used to improve search.

PAPER | Enhancing Credibility Judgment of Web Search Results

Yusuke Yamamoto, Katsumi Tanaka, *Kyoto University, Japan*

Describes a system for helping users to judge the credibility of Web search results and to re-rank them based on the credibility. Can help users find credible Web pages efficiently.

PAPER | Augmenting Web Pages and Search Results to Support Credibility Assessment

Julia Schwarz, *Carnegie Mellon University, Microsoft Research, USA*
Meredith Morris, *Microsoft Research, USA*

We present and evaluate visualizations designed to augment search results and Web pages to help users assess web credibility.

■ TECHNICAL PRESENTATIONS | 223/224

EXPRESSION & PERCEPTION

SESSION CHAIR: Justine Cassell, *Carnegie Mellon University*

PAPER | Using Fast Interaction to Create Intense Experiences

Joe Marshall, Steve Benford, *University of Nottingham, UK*

Study of an interactive running and poetry experience which deliberately pushes people to the limit. Demonstrates how designers may use physical exertion to encourage a strong emotional response in participants.

PAPER | A VJ Centered Exploration of Expressive Interaction

Jonathan Hook, David Green, *Newcastle University, UK*
John McCarthy, *University College Cork, Ireland*
Stuart Taylor, *Microsoft Research Cambridge, UK*
Peter Wright, Patrick Olivier, *Newcastle University, UK*

Describes a study of expressive interaction in video-jockey practice, which utilises a novel Creative Response method. Can provide insight for those wishing to design for VJs and other expressive users.

NOTE | Placing a Value on Aesthetics in Online Casual Games

Erik Andersen, Yun-En Liu, Rich Snider, Roy Szeto, Zoran Popović, *University of Washington, USA*

Describes a series of A/B tests that measured the value of aesthetics in two published Flash games. Can help determine where resources should be spent during the game development process.

NOTE | Kinetic Tiles

Hyunjung Kim, Woohun Lee, *KAIST, Republic of Korea*

Presents a design material for physical kinetic animations. Can assist users to create and edit ambient and pleasurable kinetic expressions through simple tangible-touch interaction.

PAPER | SandCanvas: A Multi-touch Art Medium Inspired by Sand Animation

Rubaiat Habib Kazi, Kien Chuan Chua, Shengdong Zhao, *National University of Singapore, Singapore*
Richard Davis, *Singapore Management University, Singapore*
Kok-Lim Low, *National University of Singapore, Singapore*

Discusses common sand animation hand gestures, real-time sand rendering, and unique affordances of an artistic medium named SandCanvas. SandCanvas simplifies the creation of sand animation and enables new capabilities.

■ PANEL | BALLROOM A/B

RE-ENGINEERING HEALTH CARE WITH INFORMATION TECHNOLOGY

PANELISTS

Keith Butler, Thomas Payne, *University of Washington, USA*
Ben Shneiderman, *University of Maryland, USA*
Patricia Brennan, *University of Wisconsin, USA*
Jiajie Zhang, *University of Texas, USA*

National experts discuss key issues that should drive health IT, and challenges for HCI to play a leading role.

■ SPECIAL INTEREST GROUP | 111/112

GEOGRAPHIC HUMAN-COMPUTER INTERACTION

ORGANIZERS

Brent Hecht, *Northwestern University, USA*
Johannes Schöning, *German Research Center for Artificial Intelligence (DFKI), Germany*
Thomas Erickson, Reid Priedhorsky, *IBM T.J. Watson Research Center, USA*

■ TECHNICAL PRESENTATIONS | 205/206/207

FLEXIBLE GRIPS & GESTURES

SESSION CHAIR: Hiroshi Ishii, *MIT*

PAPER | Evaluating Effects of Structural Holds on Pointing and Dragging Performance with Flexible Displays

Rob Dijkstra, Christopher Perez, Roel Vertegaal, *Queen's University, Canada*

Empirical evaluation of pointing and dragging performance on a flexible display. Demonstrates force fields in a flexible display, generated by ways of holding, affect IP in both pointing and dragging tasks.

PAPER | PaperPhone: Understanding the Use of Bend Gestures in Mobile Devices with Flexible Electronic Paper Displays

Byron Lahey, Audrey Girouard, *Queen's University, Canada*
Winslow Burleson, *Arizona State University, USA*
Roel Vertegaal, *Queen's University, Canada*

Presents a study of user-designed bend gestures in executing tasks with a functional flexible E Ink display. Provides recommendations for interaction design for emerging flexible display technologies.

PAPER | Pinstripe: Eyes-free Continuous Input on Interactive Clothing

Thorsten Karrer, Moritz Wittenhagen, Leonhard Lichtschlag, Florian Heller, Jan Borchers, *RWTH Aachen University, Germany*

Presents and evaluates a textile input device that can be used to control linear values in mobile devices. Shows where on their body users prefer to interact with smart garments.

PAPER | Grips and Gestures on a Multi-Touch Pen

Hyunyoung Song, *University of Maryland, USA*
Hrvoje Benko, *Microsoft Research, USA*
Francois Guimbretiere, *Cornell University, USA*
Shahram Izadi, Xiang Cao, *Microsoft Research, UK*
Ken Hinckley, *Microsoft Research, USA*

Augments a digital pen to include a multi-touch sensor on its barrel. Such a pen can detect hand grips and finger gestures to open up a larger set of novel interactions.

■ TECHNICAL PRESENTATIONS | 208/209

3D INTERACTION

SESSION CHAIR: Stephen Voida, *University of California, Irvine*

PAPER | WYSIWYF: Exploring and Annotating Volume Data with a Tangible Handheld Device

Peng Song, Wooi Boon Goh, Chi-Wing Fu, *Nanyang Technological University, Singapore*
Qiang Meng, Pheng-Ann Heng, *The Chinese University of Hong Kong, Hong Kong*

Integration of a multi-touch wall display with a tangible handheld device with multi-touch and tilt sensing capabilities to provide intuitive what-you-see-is-what-you-feel visual exploration and annotation of volume data

PAPER | Eden: A Professional Multitouch Tool for Constructing Virtual Organic Environments

Kenrick Kin, Tom Miller, *Pixar Animation Studios, USA*
Björn Bollensdorff, *Technische Universität Berlin, Germany*
Tony DeRose, *Pixar Animation Studios, USA*
Björn Hartmann, Maneesh Agrawala, *University of California, Berkeley, USA*

Describes a professional multitouch tool for building virtual organic environments at Pixar Animation Studios. Can assist application developers in designing multitouch gestures and systems.

PAPER | 2D Touching of 3D Stereoscopic Objects

Dimitar Valkov, Frank Steinicke, Gerd Bruder, Klaus Hinrichs, *University of Münster, Germany*

Recent developments have suggested to combine multi-touch and stereoscopic visualization. In this paper we analyze the relation between the 3D position of a stereoscopic object and the actual touch point.

PAPER | TZee: Exploiting the Lighting Properties of Multi-touch Tabletops for Tangible 3D Interactions

Cary Williams, *University of Manitoba, Canada*
Xing Dong Yang, *University of Alberta, Canada*
Grant Partridge, Josh Millar-Usiskin, Arkady Major, Pourang Irani, *University of Manitoba, Canada*

TZee, is a passive tangible for manipulating virtual objects in 3D. TZee is easy to construct and allows complex operations such as slicing 3D objects.

■ TECHNICAL PRESENTATIONS | 211

CROWDSOURCING

SESSION CHAIR: Niki Kittur, *Carnegie Mellon University*

PAPER | Guess Who? Enriching the Social Graph through a Crowdsourcing Game

Ido Guy, *IBM Research Haifa, Israel*
Adam Perer, *IBM Research, USA*
Tal Daniel, *IBM Research Haifa, Israel*
Ohad Greenshpan, *Tel Aviv University, Israel*
Itai Turbahn, *MIT, USA*

Our contribution is a crowdsourcing game to help enrich and expand the topology of a social network. The results indicate the game rapidly collects large volumes of valid information.

PAPER | PhotoCity: Training Experts at Large-scale Image Acquisition Through a Competitive Game

Kathleen Tuite, *University of Washington, USA*
Noah Snavely, *Cornell University, USA*
Dun-yu Hsiao, Nadine Tabing, Zoran Popović, *University of Washington, USA*

Describes a game in which players take thousands of photos and reconstruct universities in 3D. Shows games can train experts and crowdsource a small number people to great effect.

PAPER | Cooks or Cobblers? Crowd Creativity through Combination

Lixiu Yu, Jeffrey Nickerson, *Stevens Institute of Technology, USA*

Describes a system that fosters crowd creativity, and reports on an experiment in which 1207 participants generated, combined, and evaluated design sketches. Catalyzes the collective mind by crowdsourcing design.

PAPER | Human Computation: A Survey and Taxonomy of a Growing Field

Alexander Quinn, Benjamin Bederson, *University of Maryland, USA*

Human computation sometimes resembles a collection of many exciting projects lacking an overarching framework. This talk will piece together the landscape and lay the groundwork for finding new directions to explore.

■ TECHNICAL PRESENTATIONS | 212/213/214

USER STUDIES/ETHNOGRAPHY IN DEVELOPING REGIONS

SESSION CHAIR: John Thomas, *IBM Research*

ToCHI | Designing Mobile Interfaces for Novice and Low-Literacy Users

Indrani Medhi, *Microsoft Research, India*
Somani Patnaik, *MIT, USA*
Emma Brunskill, *University of California, Berkeley, USA*
S. N. Gautama Nagasena, William Thies, *Microsoft Research, India*
Kentaro Toyama, *University of California, Berkeley, USA*

PAPER | The Times They Are A-Changin': Mobile Payments in India

Deepti Kumar, *IIT Madras, India*
David Martin, Jacki O'Neill, *Xerox Research Centre Europe, France*

Ethnographic study detailing various micro-payment and financial practices across a variety of everyday settings in India. Findings used to suggest implications for design of an m-payment system and related services.

PAPER | Folk Music Goes Digital in India

Neha Kumar, *University of California, Berkeley, USA*
Gopal Chouhan, *Self-Employed, India*
Tapan Parikh, *University of California, Berkeley, USA*

Describes the motivations underlying folk music practices, the adoption of new media technologies for folk music production and dissemination, and the resultant widespread nature of piracy across four field sites in rural India.

NOTE | Designing for Emerging Rural Users: Experiences from China

Elisa Oreglia, *University of California, Berkeley, USA*
Ying Liu, Wei Zhao, *IBM Research China, China*

Describes information-sharing practices and ICT use in rural Northern China. Can help understanding emerging users in a region that faces different challenges than more studied areas in Africa and India.

NOTE | Adapting Usability Testing for Oral, Rural Users

Trina Gorman, *Literacy Bridge, USA*
Emma Rose, Judith Yaaqoubi, *University of Washington, USA*
Andrew Bayor, *Literacy Bridge, Ghana*
Beth Kolko, *University of Washington, USA*

Describes the methodology of a usability study in Ghana that evaluates a product designed for oral, rural users. Can assist researchers in adapting traditional usability methods within developing countries.

■ **TECHNICAL PRESENTATIONS | 215/216**

VISUALIZATION & PERCEPTION

SESSION CHAIR: Mary Czerwinski, *Microsoft Research*

PAPER | Evaluating Video Visualizations of Human Behavior

Mario Romero, Alice Vialard, John Peponis, John Stasko, Gregory Abowd, *Georgia Institute of Technology, USA*

We evaluated a visualization of activity through computer vision with behavior analysts and architects. We determined that it cuts search time by five and that it creates opportunities for discovery.

PAPER | Sizing Up Visualizations: Effects of Display Size in Focus+Context, Overview+Detail, and Zooming Interfaces

Mikkel Rønne Jakobsen, Kasper Hornbæk, *University of Copenhagen, Denmark*

Experiment investigating effects of display size on interactive visualization techniques for multi-scale navigation. Can help in understanding benefits and drawbacks of techniques and how to adapt them for large displays.

PAPER | The Impact of Social Information on Visual Judgments

Jessica Hullman, Eytan Adar, Priti Shah, *University of Michigan, USA*

Large online experiments suggesting that responses to graphical perception tasks online are subject to potential risks of social proof. Can assist system designers in considering whether to present social information.

PAPER | Directing Attention and Influencing Memory with Visual Saliency Modulation

Eduardo Veas, Erick Mendez, *Graz University of Technology, Austria*
Steven Feiner, *Columbia University, USA*
Dieter Schmalstieg, *Graz University of Technology, Austria*

Presents studies showing how modulating prerecorded video can imperceptibly direct a user's attention toward preselected parts of a scene. The technique is interactive, with potential uses for augmented reality.

■ **TECHNICAL PRESENTATIONS | 217/218/219**

DIGITAL CONTENT & COLLECTIONS

SESSION CHAIR: Dan Cosley, *Cornell University*

ToCHI | On Human Remains: Values and Practice in the Home Archiving of Cherished Objects

David Kirk, *University of Nottingham, UK*
Abigail Sellen, *Microsoft Research, UK*

PAPER | Freed: a System for Creating Multiple Views of a Digital Collection during the Design Process

Philip Mendels, Joep Frens, Kees Overbeeke, *Eindhoven University of Technology, Netherlands*

Describes a multiple-view, force-based layout system for spatially organizing a digital collection during the design process. Enables design students to define relations within, explore, communicate and reflect on their collection.

PAPER | Teenagers and Their Virtual Possessions: Design Opportunities and Issues

William Odom, John Zimmerman, Jodi Forlizzi, *Carnegie Mellon University, USA*

We report on interviews with teenagers exploring the perceived value of their virtual possessions compared to material things, and detail research and design opportunities and issues in this emerging space.

PAPER | Life Editing: Third-Party Perspectives on Lifelog Content

Daragh Byrne, *Dublin City University, Ireland*
Aisling Kelliher, *Arizona State University, USA*
Gareth Jones, *Dublin City University, Ireland*

An exploratory study of third party storytelling with personal lifelog content. Offers insights, reflections and design recommendations relevant to interpretive life practices and tools.

■ TECHNICAL PRESENTATIONS | 220/221/222

SEARCH & STUFF

SESSION CHAIR: Susan Dumais, *Microsoft Research*

PAPER | Metrics for the Evaluation of News Site Content Layout in Large-Screen Contexts

Michael Nebeling, Fabrice Matulic, Moira Norrie,
ETH Zurich, Switzerland

This work studied how the visual area of the browser is utilised by news sites at different widescreen resolutions, which resulted in a set of metrics for assessing content layout.

PAPER | YouPivot: Improving Recall with Contextual Search

Joshua Hailpern, *University of Illinois at Urbana Champaign, USA*
Nicholas Jitkoff, Andrew Warr, *Google, USA*
Karrie Karahalios, *University of Illinois at Urbana Champaign, USA*
Robert Sesek, *Boston University, USA*
Nik Shkrob, *University of Waterloo, Canada*

Leveraging contextual cues, the natural method of human memory, YouPivot allows a users to search their digital history for context they remember, regardless of semantic relationship, and find their files.

PAPER | An Examination of Two Delivery Modes for Interactive Search System Experiments: Remote and Laboratory

Diane Kelly, *University of North Carolina, Chapel Hill, USA*
Karl Gyllstrom, *Katholieke Universiteit Leuven, Belgium*

Compares two delivery modes for interactive search system experiments (remote, laboratory) and finds few differences in participants, participation behaviors, search behaviors and evaluation behaviors. Provides guidance for those designing such studies.

PAPER | Review Spotlight: A User Interface for Summarizing User-generated Reviews Using Adjective-Noun Word Pairs

Koji Yatani, Michael Novati, Andrew Trusty, Khai Truong,
University of Toronto, Canada

Investigates the design of a tag-cloud interface which uses adjective-noun pairs to summarize and support quick detail exploration of online reviews.

■ TECHNICAL PRESENTATIONS | 223/224

DESIGN MATERIALITY

SESSION CHAIR: Scott McCrickard, *Virginia Tech*

PAPER | Making Spaces: How Design Workbooks Work

William Gaver, *Goldsmiths, University of London, UK*

Describes how we construct design workbooks, which are collections of proposals and related materials. Their mix of resolution, openness and provisionality is useful in evolving rich and non-obvious design spaces.

ToCHI | Sketching Interactive Systems with Sketchify

Željko Obrenović, Jean-Bernard Martens, *Eindhoven University of Technology, The Netherlands*

PAPER | Inspirational Bits - Towards a Shared Understanding of the Digital Material

Petra Sundström, *Mobile Life @ SICS, Sweden*
Alex S. Taylor, *Microsoft Research, UK*
Katja Grufberg, *Mobile Life @ SICS, Sweden*
Niklas Wirström, *SICS, Sweden*
Jordi S. Belenguer, *Wireless @ KTH, Sweden*
Marcus Lundén, *SICS, Sweden*

Describes what we call inspirational bits as a way for a multi-disciplined design team to become more familiar with the design material we in HCI work with, the digital material.

PAPER | Don't Drop It! Pick It Up and Storyboard

Shahtab Wahid, D. McCrickard, *Virginia Tech, USA*
Joseph DeGol, *The Pennsylvania State University, USA*
Nina Elias, *Michigan State University, USA*
Steve Harrison, *Virginia Tech, USA*

Describes how storyboards can be created by reappropriating artifacts and their design tradeoffs. Presents two studies on PIC-UP, a storyboarding tool facilitating the sharing of design artifacts.

■ PANEL | BALLROOM A/B

REPLICHI – SHOULD CHI BE REPLICATING AND VALIDATING RESULTS MORE?

PANELISTS

Max Wilson, *Swansea University, UK*
Wendy Mackay, *INRIA and Stanford University, France*
Ed Chi, *Google, USA*
Michael Bernstein, *MIT, USA*
Dan Russell, *Google, USA*
Harold Thimbleby, *Swansea University, UK*

Replicating findings is core to scientific communities, but perhaps not in HCI. With future CHI-organisers on board, RepliCHI will discuss how CHI might facilitate or reward replication in the future.

■ SPECIAL INTEREST GROUP | 111/112

APPLYING THE NSF BROADER IMPACTS CRITERIA TO HCI RESEARCH

ORGANIZERS

Juan Gilbert, *Clemson University, USA*
Margaret Burnett, *Oregon State University, USA*
Richard Ladner, *University of Washington, USA*
Mary Beth Rosson, *The Pennsylvania State University, USA*
Janet Davis, *Grinnell College, USA*

■ TECHNICAL PRESENTATIONS | 205/206/207

MULTI-TOUCH

SESSION CHAIR: Tomer Moscovich, *INRIA*

PAPER | Rock & Rails: Extending Multi-touch Interactions with Shape Gestures to Enable Precise Spatial Manipulations

Daniel Wigdor, Hrvoje Benko, *Microsoft Research, USA*
John Pella, Jarrod Lombardo, Sarah Williams, *Microsoft, USA*

Rock & Rails uses shape gestures to augment the standard set of direct manipulation gestures on a direct, multi-touch display, enabling increased precision, reduced occlusion, and transform isolation.

PAPER | Multi-touch Document Folding: Gesture Models, Fold Directions and Symmetries

Patrick Chiu, Chunyuan Liao, Francine Chen, *FX Palo Alto Laboratory, USA*

Describes development of techniques for multi-touch document folding and a user study of three gesture models. Can help designers to better understand gesture models, fold directions and symmetries.

PAPER | FingerGlass: Efficient Multiscale Interaction on Multitouch Screens

Dominik Käser, Maneesh Agrawala, *University of California, Berkeley, USA*
Mark Pauly, *EPFL, Switzerland*

Describes a bimanual multitouch interaction technique for the navigation of virtual scenes and the precise selection and translation of objects therein. Improves performance time by 50% compared to state-of-the-art tools.

NOTE | An Interactive Multi-touch Sketching Interface for Diffusion Curves

Qian Sun, Chi-Wing Fu, Ying He, *Nanyang Technological University, Singapore*

A novel multi-touch sketching interface enabling interactive and practical design with 2D diffusion curves is proposed; featured interaction techniques include simultaneous sketching of multiple diffusion curves and at-the-spot colors tuning.

NOTE | Grids & Guides: Multi-Touch Layout and Alignment Tools

Mathias Frisch, Sebastian Kleinau, Ricardo Langner, Raimund Dachselt, *Otto-von-Guericke University Magdeburg, Germany*

Presents two tools supporting graphical layout tasks by multitouch input. Interactive grids allow direct adjustment of their cells' size. Multitouch alignment guides support path alignment of objects along different shapes.

■ TECHNICAL PRESENTATIONS | 208/209

POINTING 2: FITTS LAW

SESSION CHAIR: Shumin Zhai, *IBM Research*

PAPER | Fitts' Law as an Explicit Time/Error Trade-Off

Yves Guiard, Halla Olafsdottir, Simon Perrault, *LTCI CNRS - Telecom ParisTech, France*

Presents a simple resource-allocation theory of Fitts' law where movement time and relative variable error trade for each other. Reports data best modeled with a one-coefficient square-root equation.

PAPER | Benchmarking Pointing Techniques with Distractors: Adding a Density Factor to Fitts' Pointing Paradigm

Renaud Blanch, *UJF-Grenoble 1, France*
Michael Ortega, *CNRS, France*

Extends Fitts' paradigm with distractors and Fitts' law to account for them. Allows more contrasted comparisons between enhanced pointing techniques.

PAPER | The Effects of Task Dimensionality, Endpoint Deviation, Throughput Calculation, and Experiment Design on Pointing Measures and Models

Jacob Wobbrock, Kristen Shinohara, Alex Jansen, *University of Washington, USA*

Presents results from an investigation of issues related to task dimensionality (1-D vs. 2-D) and throughput in pointing evaluations. Gives concrete recommendations for how to conduct pointing studies.

NOTE | The Effects of Intended Use on Target Acquisition

Regan Mandryk, Calvin Lough, *University of Saskatchewan, Canada*

Our study presents the first evidence that the intended use (e.g., clicking, docking) of a target affects its acquisition in terms of movement time and motion kinematics for computer aiming.

NOTE | Modeling and Predicting Pointing Errors in Two Dimensions

Jacob Wobbrock, Alex Jansen, Kristen Shinohara, *University of Washington, USA*

Validates a predictive model of pointing accuracy in two-dimensions. Gives a "Fitts' law for accuracy" that can be used for modeling and evaluation.

■ SPECIAL INTEREST GROUP (INVITED) | 210

DESIGN COMMUNITY: WHAT DOES DESIGN MEAN FOR CHI?

ORGANIZERS

Scott Pobiner, *Parsons the New School for Design, USA*
Carla Diana, *Smart Design, USA*

■ TECHNICAL PRESENTATIONS | 211

EVALUATION AND/OR DESIGN BASED ON MANY USERS

SESSION CHAIR: Manfred Tscheligi, *University of Salzburg*

PAPER | Into the Wild: Challenges and Opportunities for Field Trial Methods

Barry Brown, *University of California, San Diego, USA*
Stuart Reeves, *University of Nottingham, UK*
Scott Sherwood, *University of Glasgow, UK*

This paper discusses methodological challenges in running user trials. Using a 'trial of trials' we examined how trial insights are dependent on the practices of investigators and participants.

CASE STUDY | Why Context Is Important When Gathering Design Feedback: An E-commerce Case Study

Michael Katz, *eBay, Inc., USA*

Case study demonstrating the importance of evaluating designs in the context of the holistic interactive process that users will experience. Can assist practitioners in crafting appropriate evaluations of designs.

PAPER | When a Little Knowledge Isn't a Dangerous Thing

Jacki O'Neill, David Martin, Tommaso Colombino, Antonietta Grasso, *Xerox Research Centre Europe, France*

Ethnographic study examining the effect of collocation and distribution on bureaucratic work. Critiques elements of organisational virtualisation and emphasises the importance of people within systems.

PAPER | Field Trial of Tiramisu: Crowd-Sourcing Bus Arrival Times to Spur Co-Design

John Zimmerman, Anthony Tomasic, *Carnegie Mellon University, USA*
Charles Garrod, *Swarthmore, USA*
Daisy Yoo, Chaya Hiruncharoenvate, *Carnegie Mellon University, USA*
Rafae Aziz, *University of Washington, USA*
Nikhil Thirunevgadam, *Stanford University, USA*
Yun Huang, Aaron Steinfeld, *Carnegie Mellon University, USA*

This paper reports on a field trial of a social computing system that allows transit riders to crowd-source real-time arrival information by sharing GPS traces from their mobile phones.

■ TECHNICAL PRESENTATIONS | 212/213/214

HOMELESS USERS

SESSION CHAIR: Phoebe Sengers, *Cornell University*

PAPER | Publics in Practice: Ubiquitous Computing at a Shelter for Homeless Mothers

Christopher Le Dantec, *Georgia Institute of Technology, USA*
Robert Farrell, Jim Christensen, Mark Bailey, Jason Ellis, Wendy A. Kellogg, *IBM T.J. Watson Research Center, USA*
W. Keith Edwards, *Georgia Institute of Technology, USA*

We designed and deployed a mobile communication system at a shelter for homeless mothers and report on the use and adoption of that system over a 30 week period.

PAPER | Homeless Young People and Living with Personal Digital Artifacts

Jill Woelfer, David Hendry, *University of Washington, USA*

Empirical study of a community of homeless young people and the ways they take on, hold, and part with personal digital artifacts. Provides constraints and implications for design.

PAPER | Improving the Safety of Homeless Young People with Mobile Phones: Values, Form and Function

Jill Woelfer, Amy Iverson, David Hendry, Batya Friedman, *University of Washington, USA*
Brian Gill, *Seattle Pacific University, USA*

Empirical study which considers how homeless young people could use mobile phones to keep safe. Includes detailed analyses of value sketches and value scenarios. Provides opportunities for design.

■ TECHNICAL PRESENTATIONS | 215/216

VISUAL ANALYTICS

SESSION CHAIR: Jeffrey Heer, *Stanford University*

PAPER | Playable Data: Characterizing the Design Space of Game-y Infographics

Nicholas Diakopoulos, Funda Kivran-Swaine, Mor Naaman, *Rutgers University, USA*

We explore the design of interactive information graphics which intertwine visual analytic tasks with game mechanics. Our study shows that such designs can redistribute attention and interaction in interesting ways.

PAPER | Cardiogram: Visual Analytics for Automotive Engineers

Michael Sedlmair, *University of British Columbia, Canada*
Petra Isenberg, *INRIA, France*
Dominikus Baur, Michael Mauerer, *University of Munich, Germany*
Christian Pigorsch, *BMW Group, Germany*
Andreas Butz, *University of Munich, Germany*

Describes a longitudinal field study at a large automotive company, a novel visual analytics tool, and design guidelines. Can help visual analytics practitioners integrating their tools with real-world application domains.

PAPER | KronoMiner: Using Multi-Foci Navigation for the Visual Exploration of Time-Series Data

Jian Zhao, *University of Toronto, Canada*
Fanny Chevalier, *Ontario College of Art & Design University, Canada*
Ravin Balakrishnan, *University of Toronto, Canada*

Describes a multi-purpose visualization tool for the exploration of time-series data that seamlessly integrates novel interaction techniques, rich navigation capabilities and analytical support.

PAPER | LifeFlow: Visualizing an Overview of Event Sequences

Krist Wongsuphasawat, John Alexis Guerra Gómez, Catherine Plaisant, Taowei Wang, *University of Maryland, USA*
Meirav Taieb-Maimon, *Ben-Gurion University of the Negev, Israel*
Ben Shneiderman, *University of Maryland, USA*

We introduce a novel overview visualization for event sequences called LifeFlow. LifeFlow is scalable, can summarize all possible sequences, and represents the temporal spacing of the events within sequences.

■ TECHNICAL PRESENTATIONS | 217/218/219

PHOTO SHARING

SESSION CHAIR: Siân Lindley , *Microsoft Research*

PAPER | The Photostroller: Supporting Diverse Care Home Residents in Engaging with the World

William Gaver, Andy Boucher, John Bowers, *Goldsmiths, University of London, UK*
Mark Blythe, *Northumbria University, UK*
Nadine Jarvis, David Cameron, Tobie Kerridge, Alex Wilkie, Robert Phillips, *Goldsmiths, University of London, UK*
Peter Wright, *Newcastle University, UK*

The Photostroller shows a stream of images to elderly care home residents. An example of research through design, it supports ludic engagement by balancing specificity and openness, control and drift.

PAPER | Automics: Souvenir Generating Photoware for Theme Parks

Abigail Durrant, *University of Nottingham, UK*
Duncan Rowland, *University of Lincoln, UK*
David Kirk, Steve Benford, Joel Fischer, Derek McAuley, *University of Nottingham, UK*

Describes initial fieldwork and subsequent design and evaluation of Automics, a mobile device based photo-souvenir service, supporting capture, sharing and annotation of digital images amongst groups of theme park visitors.

PAPER | Contextual Dynamics of Group-Based Sharing Decisions

Simon Jones, Eamonn O'Neill, *University of Bath, UK*

Addresses the burden of fine-grained content sharing with social network contacts. Presents a novel approach to understanding relationships between properties of SN contacts, content, context and sharing decisions.

PAPER | Pass-Them-Around: Collaborative Use of Mobile Phones for Photo Sharing

Andrés Lucero, Jussi Holopainen, Tero Jokela, *Nokia Research Center, Finland*

Describes novel interaction techniques to support spontaneous photo sharing between collocated users using their mobile phones. Can assist in developing rich collaborative applications for mobile devices and other interactive surfaces.

■ **TECHNICAL PRESENTATIONS | 220/221/222**

WEB SEARCH & USABILITY

SESSION CHAIR: Mira Dontcheva, *Adobe Systems*

PAPER | ClassSearch: Facilitating the Development of Web Search Skills through Social Learning

Neema Moraveji, *Stanford University, USA*
Meredith Morris, Daniel Morris, Mary Czerwinski, Nathalie Henry Riche, *Microsoft Research, USA*

The design and study of a system to enable the social learning of Web search skills in a classroom environment by displaying aggregated and individual searcher metadata in myriad arrangements.

PAPER | Role of Available and Provided Resources in Sensemaking

Nikhil Sharma, *University of Pittsburgh, USA*

Investigates how available online resources and provided artifacts are used differently during sensemaking. Findings can help designers of sensemaking support systems and those interested in collaborative sensemaking.

PAPER | Characterizing the Usability of Interactive Applications Through Query Log Analysis

Adam Fourney, Richard Mann, Michael Terry, *University of Waterloo, Canada*

We introduce CUTS: Characterizing Usability Through Search, a method to learn the primary tasks and needs of a user population via analysis of Internet search query logs.

NOTE | Determining Relevancy: How Software Developers Determine Relevant Information in Feeds

Thomas Fritz, Gail Murphy, *University of British Columbia, Canada*

Formative study describing which factors and how certain context can support developers in determining relevance of items in news feeds. Can assist in designing tools for project awareness.

NOTE | Measuring Web Page Revisitation in Tabbed Browsing

Haimo Zhang, Shengdong Zhao, *National University of Singapore, Singapore*

Proposes a new way to more accurately measure web page revisitation rate for tabbed browsing. Sheds light on future researches relating to web page revisitation and tabbed browsing.

■ **TECHNICAL PRESENTATIONS | 223/224**

PERFORMING ARTS

SESSION CHAIR: Erik Stolterman, *Indiana University*

PAPER | Evaluating Longitudinal Projects Combining Technology with Temporal Arts

Celine Latulipe, Erin Carroll, *University of North Carolina, Charlotte, USA*
Danielle Lottridge, *Stanford University, USA*

This paper contributes a mixed-methods approach to longitudinal evaluation of projects that combine technology with performing arts. We describe our evaluations of productions and participation in the Dance.Draw project.

PAPER | Love, Hate, Arousal and Engagement: Exploring Audience Responses to Performing Arts

Celine Latulipe, Erin Carroll, *University of North Carolina, Charlotte, USA*
Danielle Lottridge, *Stanford University, USA*

We present our exploration of measuring audience engagement through exploratory and quantitative studies. We collected galvanic skin response data and correlated these with explicit audience responses.

PAPER | Designing from within: humanaquarium

Robyn Taylor, *University of Alberta, Canada*
Guy Schofield, John Shearer, Jayne Wallace, Peter Wright, *Newcastle University, UK*
Pierre Boulanger, *University of Alberta, Canada*
Patrick Olivier, *Newcastle University, UK*

Describes an experience-centred methodology developed during the design of a participatory performance piece, 'humanaquarium'. Discusses the benefits of designing from within, using observations gathered from researchers inside the design space.

Notes

Wednesday

= 10 minutes (Note, short Case Study) = 12 minutes (alt.chi) = 20 minutes (Paper, ToCHI, long Case Study) = unscheduled time

	8:00–8:45	9:00–10:00	11:00–12:20	14:00–15:20	16:00–17:20
Ballroom A/B	**CHI Madness** Page 60	**Invited Panel** Managing Global UX Teams Page 60	**Panel** HCI for Peace: From Idealism to Concrete Steps Page 64	**Panel** Transferability of Research Findings Page 69	**Invited Panel** The Future of Child-Computer Interaction Page 74
111/ 112		**SIG** Interactions Magazine Page 60	**Invited SIG** Digital Arts and Interaction Page 64	**SIG** Child Computer Interaction Page 69	**SIG** Communities Page 74
205/ 206/ 207		**Technical Presentations** Collaboration & Creativity Page 60	**Technical Presentations** Touch 1: Tactile & Haptics Page 64	**Technical Presentations** Decision Making & the Web Page 69	**Technical Presentations** Touch 3: Sensing Page 74
208/ 209		**Technical Presentations** Wireless Networks Page 60	**Technical Presentations** Security (Systems) Page 65	**Technical Presentations** Security (Social) Page 69	**Technical Presentations/Notes** Authentication Page 74
210		**SIG** Interactive Technologies for Health Page 61	**SIG** Engineering Community the Role of Engineering Work in CHI Page 65		**SIG** User Experience Community Page 75
211		**Technical Presentations** Storytelling & Perceptual Crossing Page 61	**Technical Presentations** Home Automation Page 65	**Technical Presentations** Games Page 70	**Technical Presentations** Cats, Dogs, Sports, Games & Books Page 75
212/ 213/ 214		**alt.chi** Look! Up in the Sky! Page 61	**Technical Presentations** Sustainability 1 Page 66	**Technical Presentations** Sustainability 2 Page 70	**Technical Presentations** User Experience Page 76
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220/ 221/ 222		**Lifetime Practice Award** Larry Tesler Page 63	**Technical Presentations** New Approaches to Usability Page 67	**Technical Presentations** Touch 2: Tactile & Targets Page 72	**Technical Presentations** Sound Interactions Page 78
223/ 224		**Technical Presentations** Time/Animations Page 63	**Technical Presentations** Design Methods Page 68	**Technical Presentations** Methods to Aid & Structure Design Page 72	**Technical Presentations** Innovation & Design Page 78

Technical Presentations include Paper, Note, Case Study and ToCHI presentations

Exhibits	Interactivity		Posters	Special Events		
Commons (Ballroom C/D) 10:00 - 18:00	**Interactivity 1** Commons (Ballroom C/D) 10:00 - 11:00 15:20 - 16:00	**Interactivity 2** (Rm 202/203/204) 10:00 - 11:00 15:20 - 16:00	**WIPs 300-499** (Ballroom Foyer) **Student Design Competition** (Registration Foyer)	**Interact with Poster Authors** (Ballroom and Registration Foyer) 10:00 - 11:00 **Buxton Collection** (Rm 201) 10:00 - 17:20	**SIGCHI Town Hall Meeting** (Rm 223/224) 12:20 - 14:00 **Hospitality Event** (Ballroom Foyer) 17:30 - 19:30	Graffito - **Interactivity Performance:** (Featured at Hospitality Event)

CHI MADNESS | BALLROOM A/B

8:00-8:45

SESSION CHAIRS:
Mira Dontcheva, *Adobe Systems*
Matt Jones, *Swansea University*
Max L. Wilson, *Swansea University*

CHI Madness returns to give everyone a lightning speed overview of the day's program.

■ **PANEL (INVITED) | BALLROOM A/B**

MANAGING GLOBAL USER EXPERIENCE TEAMS

PANELISTS

Jhilmil Jain, *Microsoft, USA*
Catherine Courage, *Citrix, USA*
Jon Innes, *UX Innovation, USA*
Arnold Lund, *Microsoft, USA*
Daniel Rosenberg, *SAP Labs, USA*
Elizabeth Churchill, *Yahoo! Research, USA*

In this panel we will discuss emerging issues and unique challenges related to managing global UX teams, and how these differ from other disciplines such as marketing, sales, engineering etc.

■ **SPECIAL INTEREST GROUP (INVITED) | 111/112**

INTERACTIONS MAGAZINE

ORGANIZERS

Ron Wakkary, *Simon Fraser University, Canada*
Erik Stolterman, *Indiana University, USA*

■ **TECHNICAL PRESENTATIONS | 205/206/207**

COLLABORATION & CREATIVITY

SESSION CHAIR: Amy Bruckman, *Georgia Institute of Technology*

PAPER | The Polymath Project: Lessons From a Successful Online Collaboration in Mathematics

Justin Cranshaw, Aniket Kittur, *Carnegie Mellon University, USA*

We provide an in-depth descriptive analysis of the Polymath Project, a group of professional mathematicians who collaborate online to solve open mathematics problems.

PAPER | Collaborative Creativity: A Complex Systems Model with Distributed Affect

Cecilia Aragon, *University of Washington; Lawrence Berkeley National Laboratory, USA*
Alison Williams, *University of East London, UK*

Describes a new dynamical systems model of creativity in distributed groups that includes affect as well as cognitive processes. Can be used to develop improved interfaces to facilitate collaborative creativity.

NOTE | Predicting the Perceived Quality of Online Mathematics Contributions from Users' Reputations

Yla Tausczik, James Pennebaker, *University of Texas at Austin, USA*

We compare the importance of four different user reputation variables in predicting the perceived quality of contributions. This study is unique in being able to measure offline reputation of users.

■ **TECHNICAL PRESENTATIONS | 208/209**

WIRELESS NETWORKS

SESSION CHAIR: Elizabeth Churchill, *Yahoo! Research*

PAPER | Why is My Internet Slow?: Making Network Speeds Visible

Marshini Chetty, *Georgia Institute of Technology, USA*
David Haslem, *Orange Sparkle Ball, USA*
Andrew Baird, *Amazon.com, USA*
Ugochi Ofoha, Bethany Sumner, Rebecca Grinter, *Georgia Institute of Technology, USA*

Describes field trial of home broadband management tool. Can assist Internet policy makers, Internet Service Providers and designers understand home internet user needs for checking and managing broadband speed.

PAPER | GridOrbit – An Awareness System Supporting the Adoption of a Volunteer Computing Infrastructure

Juan David Hincapié Ramos, Aurélien Tabard, Jakob Bardram, *IT University of Copenhagen, Denmark*

Describes a month-long study of the impact of awareness technologies - public displays and personal notifications - on the recruitment to a local volunteer computing infrastructure in a biology lab.

PAPER | How Users Associate Wireless Devices

Ming Ki Chong, Hans Gellersen, *Lancaster University, UK*

A study of eliciting spontaneous device association actions from non-technical users. Can assist designers in understanding how people conceptualise device association.

■ SPECIAL INTEREST GROUP | 210

INTERACTIVE TECHNOLOGIES FOR HEALTH

ORGANIZERS

Helena Mentis, *Microsoft Research, UK*
Harold Thimbleby, *Swansea University, UK*
Julie Kientz, *University of Washington, USA*
Gillian Hayes, *University of California, Irvine, USA*
Madhu Reddy, *The Pennsylvania State University, USA*

■ TECHNICAL PRESENTATIONS | 211

STORYTELLING & PERCEPTUAL CROSSING

SESSION CHAIR: Kristina Höök, *Stockholm University*

PAPER | ShadowStory: Creative and Collaborative Digital Storytelling Inspired by Cultural Heritage

Fei Lu, Feng Tian, Yingying Jiang, *Chinese Academy of Sciences, China*
Xiang Cao, *Microsoft Research, UK*
Wencan Luo, Guang Li, *Chinese Academy of Sciences, China*
Xiaolong Zhang, *The Pennsylvania State University, USA*
Guozhong Dai, Hongan Wang, *Chinese Academy of Sciences, China*

ShadowStory is a digital storytelling system inspired by the traditional Chinese art - shadow puppetry. We showed it not only facilitated creativity and collaboration but also promoted cultural heritage among children.

PAPER | Designing For Perceptual Crossing to Improve User Involvement

Eva Deckers, Stephan Wensveen, Rene Ahn, Kees Overbeeke, *Eindhoven University of Technology, Netherlands*

Research through design case with theoretical departure in phenomenology of perception. Design as physical hypothesis showing design relevance of the theoretical model, concluding in design notions to direct future design.

PAPER | Limits of Rereadability in Procedural Interactive Stories

Alex Mitchell, Kevin McGee, *National University of Singapore, Singapore*

Describes a study of rereading in procedural interactive stories, and the "clinical interview" method used. Can inform design of interactive stories, and study of interaction in systems that change procedurally.

■ ALT.CHI | 212/213/214

ALT.CHI: LOOK! UP IN THE SKY!

SESSION CHAIR: Anne Roudaut, *Hasso Plattner Institute*

alt.chi | Things that Hover: Interaction with Tiny Battery-less Robots on Desktop

Takashi Miyaki, Yong Ding, Behnam Banitalebi, Michael Beigl, *Karlsruhe Institute of Technology, Germany*

Describes a novel actuation technique for self-moving objects on desktop that hover by using piezoelectric actuators. Potentially can create tiny robots without any battery and enhance desktop interactions.

alt.chi | Floating Avatar: Telepresence System using Blimps for Communication and Entertainment

Hiroaki Tobita, Shigeaki Maruyama, *Sony CSL, Japan*
Takuya Kuzi, *UEC, Japan*

Describes a floating avatar system that integrates a blimp with a virtual avatar to create a unique telepresence system. The technique can significantly enhance network communication.

alt.chi | 3D Remote Interface for Smart Displays

ByungIn Yoo, Jae-Joon Han, Changkyu Choi, Hee-seob Ryu, Du Sik Park, Chang Yeong Kim, *Samsung Electronics Co., LTD., Republic of Korea*

Describes 3D interface technique for achieving the high manipulation resolution that enable media browsing in smart displays. The technique can significantly increase bare hands pointing efficiency while reducing the fatigue.

alt.chi | Flying Eyes: Free-Space Content Creation Using Autonomous Aerial Vehicles

Keita Higuchi, *The University of Tokyo, Japan*
Yoshio Ishiguro, *The University of Tokyo, Japan Society for the Promotion of Science, Japan*
Jun Rekimoto, *The University of Tokyo, Sony CSL, Japan*

We proposed a system that captures real-world scenes with flexible free-space camera motion. Based on an autonomous aerial vehicle, thesy stem automatically tracks subject person and realizes various camera flying control.

alt.chi | ChairMouse: Leveraging Natural Chair Rotation for Cursor Navigation on Large, High-Resolution Displays

Alex Endert, Patrick Fiaux, Haeyong Chung, Michael Stewart, Christopher Andrews, Chris North, *Virginia Tech, USA*

This paper identifies a distinction between interaction techniques for large displays (active vs. passive). Presents ChairMouse, a passive interaction technique for large displays.

■ **TECHNICAL PRESENTATIONS | 215/216**

EMERGENCY RESPONSE & SCHEDULING

SESSION CHAIR: Leysia Palen, *University of Colorado, Boulder*

PAPER | Rigid Structures, Independent Units, Monitoring: Organizing Patterns in Frontline Firefighting

Sebastian Denef, *Fraunhofer FIT, Germany*
David Keyson, *TU Delft, Netherlands*
Reinhard Oppermann, *Fraunhofer FIT, Germany*

This paper presents patterns of firefighting frontline practice to inform ubicomp design. We show how a rigid structure gains flexibility through independent units whose safety is ensured by monitoring activities.

PAPER | Zero-Fidelity Simulation of Fire Emergency Response: Improving Team Coordination Learning

Zachary Toups, Andruid Kerne, William Hamilton, Nabeel Shahzad, *Texas A&M University, USA*

Describes the novel method and an instance of zero-fidelity simulation games that capture human-centered tasks, rather than environments; a user study with firefighter students, shows that students improve team coordination.

PAPER | Kairoscope: Managing Time Perception and Scheduling Through Social Event Coordination

ReeD Martin, Henry Holtzman, *MIT Media Lab, USA*

Novel concept for representing flexible schedules and variable time. Shifting from a fixed time system to an event-centric model can reduce stress, optimize time management, and increase social interaction.

■ **TECHNICAL PRESENTATIONS | 217/218/219**

LEARNING

SESSION CHAIR: Maria Francesca Costabile, *University of Bari*

PAPER | Practical, Appropriate, Empirically-Validated Guidelines for Designing Educational Games

Conor Linehan, Ben Kirman, Shaun Lawson, *University of Lincoln, UK*
Gail Chan, *Oxford Brookes University, UK*

Proposes guidelines for designing educational games based upon a powerful, empirically established method of teaching. Facilitates the practical task of merging the apparently disparate goals of education and games design.

CASE STUDY | Using Community-Based Service Projects to Enhance Undergraduate HCI Education: 10 Years of Experience

Jonathan Lazar, *Towson University, USA*

Case study describing 10 years of community-based service projects in undergraduate HCI classes. Examples of successes and failures are provided, along with 7 success factors for instructors.

PAPER | The Mathematical Imagery Trainer: From Embodied Interaction to Conceptual Learning

Mark Howison, *Brown University, USA*
Dragan Trninic, Daniel Reinholz, Dor Abrahamson, *University of California, Berkeley, USA*

Describes a design-based research study to develop and evaluate an educational technology using the Wii remote. Applies cognitive-science findings concerning the embodied nature of mathematical concepts and problem solving.

■ SIGCHI AWARD TALK (INVITED) | 220/221/222

WHAT'S IT LIKE TO DESIGN A USER INTERFACE FOR SIX BILLION PEOPLE?

Larry Tesler, *Larry Tesler Consulting, USA*
Lifetime Practice Award

How is creating a user interface paradigm different from designing an application? If Cut and Paste was a new paradigm in the nineteen-seventies, what old paradigm did it replace? How did missionary zeal and serial collaboration make the GUI possible? What role did participatory design, rapid prototyping and usability testing play? What accounts for the longevity of the result? What's the prognosis for today's mobile UI? There will be primary sources in the presentation and time at the end for attendees to express contrary views.

■ TECHNICAL PRESENTATIONS | 223/224

TIME/ANIMATIONS

SESSION CHAIR: Scott Hudson, *Carnegie Mellon University*

PAPER | Kineticons: Using Iconographic Motion in Graphical User Interface Design

Chris Harrison, *Carnegie Mellon University, USA*
Gary Hsieh, *Michigan State University, USA*
Karl Willis, Jodi Forlizzi, Scott Hudson, *Carnegie Mellon University, USA*

PAPER | Temporal Distortion for Animated Transitions

Pierre Dragicevic, *INRIA, France*
Anastasia Bezerianos, *Ecole Centrale Paris, France*
Waqas Javed, Niklas Elmqvist, *Purdue University, USA*
Jean-Daniel Fekete, *INRIA, France*

Compares object tracking performance in visually cluttered animations under different temporal distortion strategies. Provides experimental evidence that motivates the use of slow-in/slow-out animation pacing in interaction design.

CASE STUDY | Interactive Sparklines: A Dynamic Display of Quantitative Information

Leo Frishberg, *Tektronix, Inc, USA*

Describes the intensive research and system design effort behind a seemingly simple information visualization. Can help design organizations better plan and manage complex design problems to deliver competitive, innovative solutions.

■ PANEL | BALLROOM A/B

HCI FOR PEACE: FROM IDEALISM TO CONCRETE STEPS

PANELISTS

Juan Pablo Hourcade, Natasha Bullock-Rest, *University of Iowa, USA*
Batya Friedman, *University of Washington, USA*
Mark Nelson, *Stanford University, USA*
Ben Shneiderman, *University of Maryland, USA*
Panayiotis Zaphiris, *Cyprus University of Technology, Cyprus*

This panel will contribute diverse perspectives on the use of computer technology to promote peace and prevent armed conflict, including the use of social media, persuasive technologies, and multi-lifespan approaches.

■ SPECIAL INTEREST GROUP (INVITED) | 111/112

DIGITAL ARTS AND INTERACTION

ORGANIZERS

David England, *Liverpool John Moores University, UK*
Ernest edmonds, *University of Technology, Sydney, Australia*
Jennifer Sheridan, *Bigdog Interactive, UK*
Scott Pobiner, *The New School for Design, USA*
Nick Bryan-Kinns, *University of London, UK*
Peter Wright, *Newcastle University, UK*
Michael Twidale, *University of Illinois, Champaign, USA*
Carla Diana, *Smart Design, USA*

The CHI Design Community looks at the intersection and cross-fertilization between HCI, and Digital and Performance Arts. We consider how the exploration of engaging and meaningful artistic experience can further push the boundaries of HCI research and practice and how tool use and models of evaluation can be explored to assist the development of creative enterprises. We consider how artists' early experiments with technology can inform mainstream design thinking, and how theories and practice in aesthetics can feed into User Experience.

■ TECHNICAL PRESENTATIONS | 205/206/207

TOUCH 1: TACTILE & HAPTICS

SESSION CHAIR: Karon MacLean, *University of British Columbia*

PAPER | Tactile Brush: Drawing on Skin with a Tactile Grid Display

Ali Israr, Ivan Poupyrev, *Disney Research Pittsburgh, USA*

Tactile Brush is an algorithm that produces high-resolution tactile strokes using low-resolution actuator grids. The design of the algorithm is derived from psychophysical investigations of sensory illusions in touch.

PAPER | A Comparative Study of Tactile Representation Techniques for Landmarks on a Wearable Device

Mayuree Srikulwong, Eamonn O'Neill, *University of Bath, UK*

Compares two tactile representation techniques for landmarks on a waist belt wearable device. Can be used for the design of tactile pedestrian navigation systems.

NOTE | Handscope: Enabling Blind People to Experience Statistical Graphics on Websites through Haptics

Da-jung Kim, Youn-kyung Lim, *KAIST, Republic of Korea*

Presents a haptic assistive device for blind people, translating statistical graphics on websites into simple haptic expression. Can assist blind people's understanding of information and increase the quality of their web-experiences.

NOTE | Nenya: Subtle and Eyes-Free Mobile Input with a Magnetically-Tracked Finger Ring

Daniel Ashbrook, *Nokia Research Center, USA*
Patrick Baudisch, *Hasso Plattner Institute, Germany*
Sean White, *Nokia Research Center, USA*

Presents "Nenya", a new finger ring input device. Nenya is always available, fast to access, and socially acceptable. Validates Nenya with two-part user study.

NOTE | The Haptic Laser: Multi-Sensation Tactile Feedback for At-a-Distance Physical Space Perception and Interaction

Francis Iannacci, Erik Turnquist, *University of Washington, USA*
Daniel Avrahami, *Intel Research, USA*
Shwetak Patel, *University of Washington, USA*

Describes a haptic feedback system for providing a range of tactile sensations to represent a physical environment at-a-distance. Designed to improve remote targeting and non-visual physical space perception.

NOTE | Interactive Generator: A Self-Powered Haptic Feedback Device

Akash Badshah, *Phillips Exeter Academy, USA*
Sidhant Gupta, Gabe Cohn, *University of Washington, USA*
Nicolas Villar, Steve Hodges, *Microsoft Research, UK*
Shwetak Patel, *University of Washington, USA*

Presents a working prototype of a general purpose wireless remote control that is self-powered and capable of providing haptic feedback.

■ TECHNICAL PRESENTATIONS | 208/209

SECURITY (SYSTEMS)

SESSION CHAIR: Keith Edwards, *Georgia Institute of Technology*

PAPER | Security Through a Different Kind of Obscurity: Evaluating Distortion in Graphical Authentication Schemes

Eiji Hayashi, Jason Hong, Nicolas Christin, *Carnegie Mellon University, USA*

User studies evaluating the risk of educated guess attacks against a recognition-based graphical authentication scheme, and the marginal security obtained by performing image distortion.

PAPER | More Than Skin Deep: Measuring Effects of the Underlying Model on Access-Control System Usability

Robert Reeder, *Microsoft, USA*
Lujo Bauer, Lorrie Cranor, *Carnegie Mellon University, USA*
Michael Reiter, *University of North Carolina, Chapel Hill, USA*
Kami Vaniea, *Carnegie Mellon University, USA*

We designed an underlying access-control model and a user interface for managing it. Our user study showed that small changes to the model led to large changes in usability.

PAPER | Does Domain Highlighting Help People Identify Phishing Sites?

Eric Lin, Saul Greenberg, Eileah Trotter, David Ma, John Aycock, *University of Calgary, Canada*

Some browsers highlight the URL domain in the address bar to help people identify phishing attacks. We show that even in the 'best case', domain highlighting is only marginally effective.

PAPER | Exploring Reactive Access Control

Michelle Mazurek, Peter Klemperer, Richard Shay, *Carnegie Mellon University, USA*
Hassan Takabi, *University of Pittsburgh, USA*
Lujo Bauer, Lorrie Cranor, *Carnegie Mellon University, USA*

Presents results from an experience-sampling study of reactive access control for personal data. Provides insight for adding reactive policy creation to an access control system.

■ SPECIAL INTEREST GROUP (INVITED) | 210

ENGINEERING COMMUNITY: THE ROLE OF ENGINEERING WORK IN CHI

ORGANIZERS

Keith Butler, *University of Washington Seattle, USA*
Ruven Brooks, *Ruven Brooks Consulting, USA*

■ TECHNICAL PRESENTATIONS | 211

HOME AUTOMATION

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

PAPER | Reflecting on Pills and Phone Use: Supporting Awareness of Functional Abilities for Older Adults

Matthew Lee, Anind Dey, *Carnegie Mellon University, USA*

Case studies of older adults reflecting on home sensor data about their medication and phone use behaviors to support self-awareness of their ability to age in place successfully.

PAPER | User-Centred Multimodal Reminders for Assistive Living

Marilyn McGee-Lennon, *University of Glasgow, UK*
Maria Wolters, *University of Edinburgh, UK*
Stephen Brewster, *University of Glasgow, UK*

We present six guidelines for designing usable and acceptable reminders for systems that help people remain in their own home despite their care needs.

CASE STUDY | Speech@Home: An Exploratory Study

A.J. Brush, Paul Johns, Kori Inkpen, Brian Meyers, *Microsoft Research, USA*

We describe results from an exploratory field study in six households to understand how people might use a speech dialog system in their homes.

PAPER | Home Automation in the Wild: Challenges and Opportunities

A.J. Brush, Bongshin Lee, Ratul Mahajan, Sharad Agarwal, Stefan Saroiu, *Microsoft Research, USA*
Colin Dixon, *University of Washington, USA*

Findings from interviews with households that have installed home automation. Identifies barriers to broader adoption of automation and directions for future research.

■ TECHNICAL PRESENTATIONS | 212/213/214

SUSTAINABILITY 1

SESSION CHAIR: Eli Blevis, *Indiana University*

PAPER | Creek Watch: Pairing Usefulness and Usability for Successful Citizen Science

Sunyoung Kim, *Carnegie Mellon University,*
Christine Robson, *IBM Almaden Research Center, University of California, Berkeley, USA*
Thomas Zimmerman, Jeffrey Pierce, Eben Haber, *IBM Almaden Research Center*

Citizen science projects often fail to produce data useful for scientists. We demonstrate a method for successful citizen science using HCI methods, with an iPhone app for watershed monitoring.

PAPER | Designing Eco-Feedback Systems for Everyday Life

Yolande Strengers, *Centre for Design, RMIT University, Australia*

Challenges dominant resource management assumptions underpinning eco-feedback programs and proposes a new design paradigm premised on the realities of everyday life. Can assist HCI designers facilitating energy and water conservation.

CASE STUDY | With a Little Help from a Friend: A Shower Calendar to Save Water

Matthias Laschke, Marc Hassenzahl, Sarah Diefenbach, Marius Tippkämper, *Folkwang University of the Arts, Germany*

Design case presenting a "persuasive" concept for reducing the consumption of water for showering. The concept fosters goal setting, comparison, competition, and communication.

NOTE | BeeParking: Feedback Interfaces for Collective Behavior Change

Silvia Gabrielli, Alessandra Sabatino, Jesus Munoz, Michele Marchesoni, Oscar Mayora, *Create-Net, Italy*

Presents the design of BeeParking, a feedback interface which supports cooperative use of a parking facility in a work environment. Provides a model of collective behavior change for future longitudinal studies.

NOTE | GreenHat: Exploring the Natural Environment Through Experts' Perspectives

Kimiko Ryokai, Lora Oehlberg, Michael Manoochehri, Alice Agogino, *University of California, Berkeley, USA*

We present the design of mobile learning experience that takes advantage of access to multiple experts and context-sensitive information in the learner's immediate physical environment.

■ TECHNICAL PRESENTATIONS | 215/216

MOBILE ISSUES

SESSION CHAIR: Jeffrey Nichols, *IBM Research*

PAPER | Telling Calls: Facilitating Mobile Phone Conversation Grounding and Management

Sukeshini Grandhi, *RWTH Aachen University, Germany*
Richard Schuler, Quentin (Gad) Jones, *New Jersey Institute of Technology, USA*

Two user studies of mobile phone conversation grounding and management. Through an application giving callers the option to provide additional information to receivers, insight was gained into negotiating interaction commitment.

PAPER | Deep Shot: A Framework for Migrating Tasks Across Devices Using Mobile Phone Cameras

Tsung-Hsiang Chang, *MIT CSAIL, USA*
Yang Li, *Google Research, USA*

Describes two interaction techniques for migrating tasks across devices using a mobile phone camera and a framework to support them. Helps mobile people to switch between devices with one shot.

ToCHI | Interaction Design for Mobile Product Recommendation Agents: Supporting Users' Decisions in Retail Stores

Young Eun Lee, *Fordham University, USA*
Izak Benbasat, *University of British Columbia, Canada*

NOTE | Eyes-Free Multitasking: The Effect of Cognitive Load on Mobile Spatial Audio Interfaces

Yolanda Vazquez-Alvarez, Stephen Brewster, *University of Glasgow, UK*

This paper presents a comparative study on spatial audio interfaces supporting eyes-free interaction under varying cognitive workload. It informs future designs of spatial audio interfaces that support mobile multitasking.

■ TECHNICAL PRESENTATIONS | 217/218/219

WEBSITE & APPLICATION DESIGN

SESSION CHAIR: Shelly Farnham, *Microsoft Research*

PAPER | FeedLack Detects Missing Feedback in Web Applications

Andrew Ko, Xing Zhang, *University of Washington, USA*

Presents FeedLack, a tool that detects missing feedback in web applications. Presents evidence that 70% of warnings are valid and 36% are critical. FeedLack can compliment usability testing and inspections.

PAPER | Entity-Linking Interfaces in User-Contributed Content: Preference and Performance

Xiao Dong, F. Maxwell Harper, Joseph A. Konstan, *University of Minnesota, USA*

Presents the results of a controlled lab study investigating user preference and performance with different interaction styles in entity linking. Can provide guidelines in developing entity linking interfaces.

PAPER | Bricolage: Example-Based Retargeting for Web Design

Ranjitha Kumar, Jerry Talton, Salman Ahmad, Scott Klemmer, *Stanford University, USA*

This paper introduces the Bricolage algorithm for example-based retargeting of Web designs. The algorithm automatically transfers the content of one Web page into the style and layout of another.

NOTE | HyperSource: Bridging the Gap Between Source and Code-Related Web Sites

Björn Hartmann, Mark Dhillon, Matthew Chan, *University of California, Berkeley, USA*

Contributes HyperSource, a system that implicitly collects visited web pages and associates them with lines of code that developers subsequently write in their IDE.

NOTE | Item Sampling for Information Architecture

Craig Miller, *DePaul University, USA*

Presents advice on selecting a sample of items when designing an information architecture. Results are based on computer simulations and apply to open card sorting.

■ TECHNICAL PRESENTATIONS | 220/221/222

NEW APPROACHES TO USABILITY

SESSION CHAIR: Elizabeth Buie, *Luminanze Consulting*

PAPER | When Designing Usability Questionnaires, Does It Hurt to Be Positive?

Jeff Sauro, *Oracle, Measuring Usability LLC, USA*
James Lewis, *IBM, USA*

Questionnaires like the System Usability Scale have both positively and negatively worded items to reduce response biases. Two experiments show that unintended mistakes, miscoding and misinterpretations outweigh any purported benefits.

PAPER | Synchronous Remote Usability Testing - A New Approach Facilitated By Virtual Worlds

Kapil Chalil Madathil, Joel Greenstein, *Clemson University, USA*

A new methodology for conducting a synchronous remote usability test using virtual worlds. The results suggest that this method appears to be a viable alternative to the conventional lab testing approach.

NOTE | Representing Users in Accessibility Research

Andrew Sears, *UMBC, USA*
Vicki Hanson, *University of Dundee, UK*

Discusses issues involved in conducting effective accessibility research including studying representative users even when this may not appear to be necessary, recruiting participant, data analysis, and describing study participants.

NOTE | Democratising Technology: Making Transformation Using Designing, Performance and Props

Ann Light, *Sheffield Hallam University, UK*

Study of older person gaining confidence with idea of technology, using performance-derived improvisational techniques and artfully placed objects that surface people's core values. Can assist in inspiring behavioral change.

CASE STUDY | Assisted Collection and Organization for Laddering Interview Data

Stephanie Deutsch, Genc Begolli, Martin Lugmayr, *CURE, Austria*
Manfred Tscheligi, *CURE, University of Salzburg, Austria*

Case study describing first experience with a GUI supported tool allowing conductors of Laddering Interviews to note responses from interviewees and further process these qualitative data within the same application.

NOTE | Post-deployment Usability: A Survey of Current Practices

Parmit Chilana, Andrew Ko, Jacob Wobbrock, *University of Washington, USA*
Tovi Grossman, George Fitzmaurice, *Autodesk Research, Canada*

We present results from a survey of 333 usability professionals about their post-deployment activities. Results suggest the need to consider the relationship between usability and software support and software maintenance.

■ **TECHNICAL PRESENTATIONS | 223/224**

DESIGN METHODS

SESSION CHAIR: Chen Zhao, *Microsoft Research*

ToCHI | Parallel Prototyping Leads to Better Design Results, More Divergence, and Increased Self-Efficacy

Steven Dow, Alana Glassco, Jonathan Kass, Melissa Schwarz, Dan Schwartz, Scott Klemmer, *Stanford University, USA*

PAPER | Collaboration personas: A new approach to designing workplace collaboration tools

Tara Matthews, Steve Whittaker, Thomas Moran, Sandra Yuen, *IBM Research - Almaden, USA*

Introduces Collaboration Personas, a new design method to enhance design of collaboration software. Inspired by personas, Collaboration Personas describe collaboration among a hypothetical group of people playing interrelated roles.

PAPER | From Garments to Gardens: Negotiating Material Relationships Online and 'By Hand'

Elizabeth Goodman, Daniela Rosner, *University of California, Berkeley, USA*

Leisure activities performed "by hand" increasingly involve digital tools. We use data from an observational field study of knitting and gardening to examine relationships to information technology around handwork.

NOTE | Persona Cases: A Technique for Grounding Personas

Shamal Faily, Ivan Flechais, *University of Oxford, UK*

Improves grounding of the Personas technique by using argumentation theory to bridge qualitative models and personas. Presents a step-by-step approach for deriving persona characteristics from Grounded Theory.

NOTE | When the Implication Is Not to Design (Technology)

Eric Baumer, *Cornell University, USA*
Six Silberman, *Bureau of Economic Interpretation, USA*

We argue technological interventions may not always be appropriate. Using examples from HCI for sustainability, we provide three questions to help articulate inappropriateness. We also describe this argument's practical ramifications.

■ PANEL | BALLROOM A/B

TRANSFERABILITY OF RESEARCH FINDINGS: CONTEXT-DEPENDENT OR MODEL-DRIVEN

PANELISTS

Ed Chi, *Google Research, USA*
Mary Czerwinski, *Microsoft Research, USA*
David Millen, *IBM Research, USA*
Dave Randall, *Metropolitan University Manchester, UK*
Gunnar Stevens, Volker Wulf, *University of Siegen, Germany*
John Zimmerman, *Carnegie Mellon University, USA*

In this panel we will explore two distinct approaches to reach transferability currently prevailing in the HCI community and discuss epistemological differences and the strengths and criticisms of each approach.

■ SPECIAL INTEREST GROUP (INVITED) | 111/112

CHILD COMPUTER INTERACTION: IDC REMIXED, CCI REMAPPED

ORGANIZERS

Janet Read, *University of Central Lancashire, UK*
Juan Pablo Hourcade, *University of Iowa, USA*
Panos Markopoulos, *Technical University Eindhoven, Netherlands*
Allison Druin, *University of Maryland, USA*

■ TECHNICAL PRESENTATIONS | 205/206/207

DECISION MAKING & THE WEB

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

PAPER | Utility of Human-Computer Interactions: Toward a Science of Preference Measurement

Michael Toomim, Travis Kriplean, Claus Pörtner, *University of Washington, USA*
James Landay, *University of Washington and Microsoft Resesarch, USA*

Method to evaluate an interface by how much you must pay someone on Mechanical Turk to use it. Argues for CHI to shift focus to measuring user preference and choice.

ToCHI | An Exploration of Relations Between Visual Appeal, Trustworthiness and Perceived Usability of Homepages

Gitte Lindgaard, Cathy Dudek, Devjani Sen, Livia Sumegi, Patrick Noonan, *Carleton University, Canada*

PAPER | Informing Decisions: How People Use Online Rating Information to Make Choices

Stelios Lelis, Andrew Howes, *University of Manchester, UK*

Describes a theory of choice information search and a controlled experiment of online consumer reviews search. Can assist designers of e-commerce web sites, and enlighten theoreticians of information search.

CASE STUDY | Does "Letting Go of the Words" Increase Engagement? A Traffic Study

Martin Colbert, *Kingston University, UK*
Angela Boodoo, *Digital Content and User Experience Strategist, UK*

Guidelines for making web content easier to use also make it more engaging in some respects. We show the opportunities and challenges of conducting web traffic experiments.

■ TECHNICAL PRESENTATIONS | 208/209

SECURITY (SOCIAL)

SESSION CHAIR: Heather Richter Lipford, *University of North Carolina, Charlotte*

PAPER | Oops, I Did It Again: Mitigating Repeated Access Control Errors on Facebook

Serge Egelman, *National Institute of Standards and Technology, USA*
Andrew Oates, *Google, Inc., USA*
Shriram Krishnamurthi, *Brown University, USA*

We perform a study on the shortcomings of Facebook's privacy settings interface and identify situations likely to cause user error. We propose modifications and validate them with two user studies.

PAPER | Integrating User Feedback with Heuristic Security and Privacy Management Systems

Prashanth Ayyavu, Carlos Jensen, *Oregon State University, USA*

Adding user feedback, ratings about morally ambiguous website dimensions (adult websites, privacy, security, business practices) into heuristic website analysis to provide clear website reports, and support more informed decision making.

PAPER | Pairing Devices for Social Interactions: A Comparative Usability Evaluation

Ersin Uzun, *PARC, USA*
Nitesh Saxena, Arun Kumar, *New York University Polytechnic Institute, USA*

Usability study of 9 different secure device pairing methods for social (two-user) settings. Can assist in understanding user preferences, usability issues and the best methods to use in social device pairing.

PAPER | Experiencing Security in Interaction Design

Niels Mathiasen, Susanne Bødker, *Aarhus University, Denmark*

Participatory design approach on design of a mobile digital signature solution for everyday people with a focus on users' experience of security.

■ **TECHNICAL PRESENTATIONS | 211**

GAMES

SESSION CHAIR: Zach Toups, *Texas A&M University*

PAPER | Building Sensitising Terms to Understand Free-play in Open-ended Interactive Art Environments

Ann Morrison, *Aalborg University, Denmark*
Stephen Viller, Peta Mitchell, *University of Queensland, Australia*

Presents sensitising terms derived from literature on free-play and observation and analysis of participation in open-ended interactive art works. Builds foundations for a language useful for HCI and inter-disciplinary researchers.

PAPER | Evaluating the Benefits of 3D Stereo in Modern Video Games

Joseph LaViola Jr., Tad Litwiller, *University of Central Florida, USA*

We present a study exploring performance benefits of 3D stereo in modern video games. The results indicate users find 3D stereo to be engaging but does not help improve gameplay.

PAPER | Target Assistance for Subtly Balancing Competitive Play

Scott Bateman, Regan Mandryk, *University of Saskatchewan, Canada*
Tadeusz Stach, *Queen's University, Canada*
Carl Gutwin, *University of Saskatchewan, Canada*

Study of three target assistance techniques for increasing competition between differently skilled players. We found two techniques were effective for balancing play and assisted players reported having more fun.

PAPER | Data Cracker: Developing a Visual Game Analytic Tool for Analyzing Online Gameplay

Ben Medler, *Georgia Institute of Technology, USA*
Michael John, *Electronic Arts (EA), USA*
Jeff Lane, *Great Northern Way, Canada*

Attendees will see the deliberate design process behind a successful analytic tool built during a game development cycle and provided with several portable development lessons for building similar tools.

■ **TECHNICAL PRESENTATIONS | 212/213/214**

SUSTAINABILITY 2

SESSION CHAIR: Thomas Erickson, *IBM Research*

PAPER | Ceci N'est Pas Une Pipe Bombe: Authoring Urban Landscapes with Air Quality Sensors

Stacey Kuznetsov, George Davis, Jian Cheung, Eric Paulos, *Carnegie Mellon University, USA*

Our air quality sensors, designed to be left and repositioned throughout public spaces, were deployed with four groups of stakeholders- parents, bicyclists, homeless and activists.

PAPER | Second-Hand Interactions: Investigating Reacquisition and Dispossession Practices around Domestic Objects

James Pierce, Eric Paulos, *Carnegie Mellon University, USA*

This paper presents findings from a qualitative study of second-hand consumption (the acquisition of previously possessed goods) and implications for sustainable interaction design.

PAPER | Practices in the Creative Reuse of e-Waste

Sunyoung Kim, Eric Paulos, *Carnegie Mellon University, USA*

Presents a design-reuse vocabulary and composition framework derived from a series of field studies. Can help designers promote active re-appropriation of domestic e-waste for creative purposes.

NOTE | A Phenomenology of Human-Electricity Relations

James Pierce, Eric Paulos, *Carnegie Mellon University, USA*

Building on Don Ihde's philosophy of technology this paper develops a theoretical framework of human-electricity relations for sustainable interaction design and HCI.

CASE STUDY | Flo: Raising Family Awareness about Electricity Use

Paul Shrubsole, *Philips Research Eindhoven, Netherlands*
Tine Lavrysen, *Delft University of Technology, Netherlands*
Maddy Janse, Hans Weda, *Philips Research Eindhoven, Netherlands*

Raising awareness of electricity consumption in fun and rewarding ways by using Flo, a concept developed with Dutch families, factoring lifestyle needs of parents and children through intuitive interaction paradigms.

■ **TECHNICAL PRESENTATIONS | 215/216**

LOCATION SHARING

SESSION CHAIR: Lars Erik Holmquist, *Swedish Institute of Computer Science*

PAPER | I'm the Mayor of My House: Examining Why People Use Foursquare - a Social-Driven Location Sharing Application

Janne Lindqvist, Justin Cranshaw, Jason Wiese, Jason Hong, John Zimmerman, *Carnegie Mellon University, USA*

Presents three user studies on why and how people use the check-in location sharing service foursquare. Can help designers in understanding how to nudge location sharing, despite privacy concerns.

PAPER | In the Best Families: Tracking and Relationships

Clara Mancini, Yvonne Rogers, Keerthi Thomas, *The Open University, UK*
Adam Joinson, *University of Bath, UK*
Blaine Price, Arosha Bandara, Lukasz Jedrzejczyk, *The Open University, UK*
Bashar Nuseibeh, *The Open University/University of Limerick, UK*

Breaching experiment exploring how location-tracking technology interferes with family contracts. Can help designers understand potential impact on tight-knit relationships.

PAPER | Opportunities Exist: Continuous Discovery of Places to Perform Activities

David Dearman, *University of Toronto, Canada*
Timothy Sohn, *Nokia Research Center, USA*
Khai Truong, *University of Toronto, Canada*

Describes the design and evaluation of a mobile application that assists in the discovery of new places to perform activities and the ability to associate new activities with familiar places.

NOTE | Location Visualization in Social Media Applications

Minna Pakanen, *Intel and Nokia Joint Innovation Center, Finland*
Jussi Huhtala, Jonna Häkkilä, *Nokia Research Center, Finland*

A Web survey investigating user preferences for graphic location indicators in social media applications. Proposes methodology for evaluating visual elements and presents certain characteristics of popular location indicator types.

NOTE | When Are Users Comfortable Sharing Locations with Advertisers?

Patrick Kelley, Michael Benisch, Lorrie Cranor, Norman Sadeh, *Carnegie Mellon University, USA*

From three weeks of location audits and survey responses, we show privacy concerns may hinder location-based advertising. We also find that expressive privacy settings may help alleviate these concerns.

■ **TECHNICAL PRESENTATIONS | 217/218/219**

TEXT ENTRY & TYPING

SESSION CHAIR: Daniel Wigdor, *Microsoft Research*

PAPER | Typing on Flat Glass: Examining Ten-Finger Expert Typing Patterns on Touch Surfaces

Leah Findlater, Jacob Wobbrock, *University of Washington, USA*
Daniel Wigdor, *Microsoft Research, University of Washington, USA*

To inform future designs of touch screen keyboards and, ultimately, support eyes-free typing, we examine typing patterns that emerge when expert users of physical keyboards touch-type on a flat surface.

PAPER | CHANTI: Predictive Text Entry Using Non-verbal Vocal Input

Adam Sporka, *Czech Technical University in Prague, Czech Republic*
Torsten Felzer, *Technische Universität Darmstadt, Germany*
Sri Kurniawan, *University of California, Santa Cruz, USA*
Ondrej Polacek, *Czech Technical University in Prague, Czech Republic*
Paul Haiduk, *Technische Universität Darmstadt, Germany*
Scott MacKenzie, *York University Toronto, Canada*

Describes a text entry method based on a combination of scanning ambiguous keyboards and the non-verbal voice input for people with physical disabilities. Presents an in-depth longitudinal qualitative study.

CASE STUDY | Using the Keystroke-Level Model for Designing User Interface on Middle-Sized Touch Screens

Evgeniy Abdulin, *Russian Academy of Sciences, Russian Federation*

The paper provides experimental results on a new interface – middle-sized touch screen, used in control systems and iPads. Can assist designers to make interfaces for middle-sized touch screens.

NOTE | AirStroke: Bringing Unistroke Text Entry to Freehand Gesture Interfaces

Tao Ni, Doug Bowman, Chris North, *Virginia Tech, USA*

Describe a technique that extends unistroke text entry to freehand gesture interfaces, while providing competitive speed and accuracy.

NOTE | Sampling Representative Phrase Sets for Text Entry Experiments: A Procedure and Public Resource

Tim Paek, Bo-June (Paul) Hsu, *Microsoft Research, USA*

A procedure for sampling representative phrases from any large corpus so that text entry researchers can develop their own stimuli. Code and phrase sets for email, Facebook and Twitter available.

■ **TECHNICAL PRESENTATIONS | 220/221/222**

TOUCH 2: TACTILE & TARGETS

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

PAPER | Enhancing Physicality in Touch Interaction with Programmable Friction

Vincent Levesque, Louise Oram, Karon MacLean, *University of British Columbia, Canada*
Andy Cockburn, *University of Canterbury, New Zealand*
Nicholas Marchuk, Dan Johnson, J. Edward Colgate, Michael Peshkin, *Northwestern University, USA*

Demonstrates that adding programmable friction to touch interfaces improves targeting performance and has a positive impact on the enjoyment, engagement and sense of realism experienced by users.

PAPER | Surfpad: Riding Towards Targets on a Squeeze Film Effect

Géry Casiez, *LIFL, INRIA Lille, University of Lille, France*
Nicolas Roussel, Romuald Vanbelleghem, *INRIA Lille, France*
Frédéric Giraud, *L2EP, INRIA Lille, University of Lille, France*

A pointing facilitation technique that operates in the tactile domain by altering a touchpad's coefficient of friction. Leads to performance benefits and is robust to high distractor densities.

PAPER | Understanding Touch

Christian Holz, Patrick Baudisch, *Hasso Plattner Institute, Germany*

Presents users' mental model of touch input—-and why it clashes with contact area-based device implementations.Systematically examines users' mental models through a series of studies.

PAPER | Magic Desk: Bringing Multi-Touch Surfaces into Desktop Work

Xiaojun Bi, *Autodesk Research, University of Toronto, Canada*
Tovi Grossman, Justin Matejka, George Fitzmaurice, *Autodesk Research, Canada*

Systematically evaluates potential multi-touch regions in a desktop configuration and implements the Magic Desk system to explore the design space of multi-touch-integrated computing. Enhances desktop computing experience with multi-touch input.

■ **TECHNICAL PRESENTATIONS | 223/224**

METHODS TO AID & STRUCTURE DESIGN

SESSION CHAIR: Rob Miller, *MIT*

PAPER | Benefits of Matching Domain Structure for Planning Software: The Right Stuff

Dorrit Billman, Lucia Arsintescucu, Michael Feary, Jessica Lee, Asha Smith, Rachna Tiwary, *NASA Ames Research Center, USA*

Evaluates software for NASA Mission Control planning and its design method, which emphasizes needs analysis. An experiment with realistic planning tasks found large performance benefits of working with the new system.

PAPER | Developmentally Situated Design (DSD): Making Theoretical Knowledge Accessible to Designers of Children's Technology

Tilde Bekker, *Eindhoven University of Technology, The Netherlands*
Alissa Antle, *Simon Fraser University, Canada*

Presents the requirements, design and evaluation of developmentally situated design (DSD) cards. Can make age specific information about children's developing cognitive, physical, social, and emotional abilities accessible to designers.

PAPER | A Spreadsheet-Based User Interface for Managing Plural Relationships in Structured Data

Eirik Bakke, David Karger, Robert Miller, *MIT, USA*

Spreadsheet-like application that lets users manage databases with one-to-many or many-to-many relationships by means of joined hierarchical views. An alternative to tailor-made FileMaker/MS Access applications, etc.

NOTE | Variation in Importance of Time-on-Task with Familiarity with Mobile Phone Models

Shunsuke Suzuki, *NEC Corporation, Japan*
Victoria Bellotti, Nick Yee, *PARC, USA*
Bonnie John, *Carnegie Mellon University, USA*
Yusuke Nakao, Toshiyuki Asahi, Shin'ichi Fukuzumi, *NEC Corporation, Japan*

An experiment revealing that correlation between time-on-task and perceived usability of mobile phones increased as familiarity with the phone models increased. Help designers strategically design UI to satisfy users.

■ PANEL | BALLROOM A/B

THE FUTURE OF CHILD-COMPUTER INTERACTION

PANELISTS

Allison Druin, *University of Maryland, USA*
Gary Knell, *Sesame Workshop, USA*
Elliot Soloway, *University of Michigan, USA*
Daniel Russell, *Google, USA*
Elizabeth Mynatt, *Georgia Institute of Technology, USA*
Yvonne Rogers, *Open University, UK*

In this panel, academic, non-profit, and industry professionals will ask, what does the future hold for "child-computer interaction?". Diverse perspectives and real-world challenges will be discussed.

■ SPECIAL INTEREST GROUP (INVITED) | 111/112

CHI CONFERENCE COMMUNITIES

ORGANIZERS

Arnold Lund, *Microsoft, USA*
Bo Begole, *PARC, USA*

Lessons learned about organizing communities at CHI, and discussion of the future of Core and Featured communities.

■ TECHNICAL PRESENTATIONS | 205/206/207

TOUCH 3: SENSING

SESSION CHAIR: Chris Harrison, *Carnegie Mellon University*

PAPER | Some Like it Hot? Thermal Feedback for Mobile Devices

Graham Wilson, Martin Halvey, Stephen Brewster, *University of Glasgow, UK*
Stephen Hughes, *SAMH Engineering, Ireland*

Experiments investigating the ability of users to detect thermal stimuli in static and mobile scenarios, results lead to guidelines for the design of thermal interfaces

PAPER | HeatWave: Thermal Imaging for Surface User Interaction

Eric Larson, Gabe Cohn, Sidhant Gupta, *University of Washington, USA*
Xiaofeng Ren, Beverly Harrison, Dieter Fox, *Intel Labs Seattle, USA*
Shwetak Patel, *University of Washington, USA*

Presents a new system for interacting with a projected planar surface using thermal imaging. HeatWave provides pressure-aware, multi-touch, and multi-user detection on arbitrary surfaces.

PAPER | AnglePose: Robust, Precise Capacitive Touch Tracking Via 3D Orientation Estimation

Simon Rogers, John Williamson, Craig Stewart, Roderick Murray-Smith, *University of Glasgow, UK*

Describes the use of particle filter to allow full pose tracking of the fingers using a simple capacitive sensing array, and shows that this can substantially improve touch accuracy.

PAPER | TouchCuts and TouchZoom: Enhanced Target Selection for Touch Displays using Finger Proximity Sensing

Xing-Dong Yang, *University of Alberta, Canada*
Tovi Grossman, *Autodesk Research, Canada*
Pourang Irani, *University of Manitoba, Canada*
George Fitzmaurice, *Autodesk Research, Canada*

We present TouchCuts and TouchZoom, which facilitate selection on touch screens by expanding when sensing finger proximity. Our studies show both techniques significantly improve efficiency in comparison to existing techniques.

■ TECHNICAL PRESENTATIONS | 208/209

AUTHENTICATION

SESSION CHAIR: Lorrie Cranor, *Carnegie Mellon University*

PAPER | Of Passwords and People: Measuring the Effect of Password-Composition Policies

Saranga Komanduri, Richard Shay, Patrick Gage Kelley, Michelle Mazurek, Lujo Bauer, Nicolas Christin, Lorrie Cranor, *Carnegie Mellon University, USA*
Serge Egelman, *National Institute of Standards and Technology, USA*

This paper presents the results of a large-scale user study on password creation and user behavior under different password-composition policies.

PAPER | MARASIM: A Novel Jigsaw Based Authentication Scheme Using Tagging

Rohit Khot, Kannan Srinathan, *International Institute of Information Technology, Hyderabad, India*
Ponnurangam Kumaraguru, *Indraprastha Institute of Information Technology, Delhi, India*

Proposed and evaluated a cued recognition based graphical authentication scheme. Blends together the security benefits of random images with the memorability gains of personal images using semantic jigsaw based design.

NOTE | Exploring Implicit Memory for Painless Password Recovery

Tamara Denning, Kevin Bowers, Marten van Dijk, Ari Juels, *RSA Labs, USA*

This note contributes a new concept for password recovery based upon a user's implicit memory for images. This work may inspire new lines of authentication research.

NOTE | Understanding Self-reported Password Sharing Strategies

Joseph 'Jofish' Kaye, *Nokia Research Center, USA*

Password sharing is often presented as a deviant practice to be eliminated. This paper suggests that it is a common practice and that people share their passwords responsibly and thoughtfully.

NOTE | On the Necessity of User-Friendly CAPTCHA

Christos Fidas, *University of Patras, Greece*
Artemios Voyiatzis, *Industrial Systems Institute, Greece*
Nikolaos Avouris, *University of Patras, Greece*

Presents a questionnaire-based survey combined with a real usage scenario of a native-language CAPTCHA mechanism aiming to investigate several aspects that affect end-user perceptions related to the quality of CAPTCHAs.

NOTE | A Diary Study of Password Usage in Daily Life

Eiji Hayashi, Jason Hong, *Carnegie Mellon University, USA*

Diary study investigating how people use passwords in their everyday lives, not limited to practices in organizations or activities on specific computers. Reports in what contexts people use their passwords.

■ **SPECIAL INTEREST GROUP (INVITED) | 210**

USER EXPERIENCE COMMUNITY: THE ROLE OF UX WORK IN CHI

ORGANIZERS

Elizabeth Buie, *Luminanze Consulting, USA*
Jhilmil Jain, *Microsoft, USA*

This SIG will discuss the ongoing work of the UX Community in SIGCHI and will talk about what the Community can do for UX practitioners and UX researchers. We will discuss the new "practitioner's takeaways" instituted for CHI 2011, discuss an idea for an "idea market" session at upcoming CHI conferences, and explore other ideas for making the SIGCHI UX Community work.

■ **TECHNICAL PRESENTATIONS | 211**

CATS, DOGS, SPORTS, GAMES & BOOKS

SESSION CHAIR: Sara Kiesler, *Carnegie Mellon University*

PAPER | Understanding People and Animals: The Use of a Positioning System in Ordinary Human-Canine Interaction

Alexandra Weilenmann, *University of Gothenburg, Sweden*
Oskar Juhlin, *Mobile Life @ Stockholm University, Sweden*

Based on an analysis of how GPS tracking systems support the interaction between dogs and hunters, we provide new directions for the field of human-animal interaction within HCI.

PAPER | Communication Technology for Human-Dog Interaction: Exploration of Dog Owners' Experiences and Expectations

Mikko Paldanius, *Nokia Research Center, Finland*
Tuula Kärkkäinen, Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, Finland*
Oskar Juhlin, *Mobile Life, Interactive Institute Stockholm, Sweden*
Jonna Häkkilä, *Nokia Research Center, Finland*

In this paper, we present two explorative studies to understand the experiences and expectations of dog owners for communication technology to support their interaction with dogs.

PAPER | Designing Sports: A Framework for Exertion Games

Florian 'Floyd' Mueller, *The University of Melbourne, Stanford, MSRA, Distance Lab, Australia*
Darren Edge, *Microsoft Research Asia, People's Republic of China*
Frank Vetere, Martin Gibbs, *The University of Melbourne, Australia*
Stefan Agamanolis, *Distance Lab, UK*
Bert Bongers, *University Technology Sydney, Australia*
Jennifer Sheridan, *BigDog Interactive, UK*

Presents a design framework informed by 9 years experience of designing exertion games that require physical effort. Supports designers in creating games for the human body.

NOTE | Cat Cat Revolution: An Interspecies Gaming Experience

Frank Noz, *Carnegie Mellon University, University of Madeira, USA*
Jinsoo An, *Independent, USA*

Cat Cat Revolution is a novel game that allows pet owners to interact and potentially strengthen their relationship with their pets by playing a digital game.

NOTE | Antiquarian Answers: Book Restoration as a Resource for Design

Daniela Rosner, *University of California, Berkeley, USA*
Alex Taylor, *Microsoft Research, UK*

As technologies age, they experience wear, sometimes resulting in loss of functionality. The aim of this paper is to enrich HCI design practices by considering the material qualities of book restoration.

■ **TECHNICAL PRESENTATIONS | 212/213/214**

USER EXPERIENCE

SESSION CHAIR: Jettie Hoonhout, *Philips Research*

PAPER | Which Version is This?: Improving the Desktop Experience within a Copy-Aware Computing Ecosystem

Amy Karlson, Greg Smith, Bongshin Lee, *Microsoft Research, USA*

Introduces the vision and value of computing ecosystems that track and surface copy relationships between files to help users manage digital belongings. Informs the design and development of such systems.

PAPER | Enticing Consumers via Incomplete Product Experience: An Investigation of Online Product Interactivity Designs

Cheng Yi, Zhenhui Jiang, *National University of Singapore, Singapore*
Izak Benbasat, *University of British Columbia, Canada*

Advocates incomplete interaction design, which outperforms both non-interactive and fully-interactive design in seducing consumers towards displayed products. Presents practitioners with a better and smarter design method to market products online.

PAPER | Old Wine in New Bottles or Novel Challenges? A Critical Analysis of Empirical Studies of User Experience

Javier Bargas-Avila, *University of Basel, Switzerland*
Kasper Hornbæk, *University of Copenhagen, Denmark*

Presents a review of how empirical research of User Experience was conducted from 2005-2009. Points out under-explored areas and potential improvements of methodology in UX research.

NOTE | Perceptual Analysis of Talking Avatar Head Movements: A Quantitative Perspective

Xiaohan Ma, Binh Le, Zhigang Deng, *University of Houston, USA*

This paper quantitatively analyzes the correlation between perceptual user ratings and joint audio-head motion features of talking avatars as well as their head motion patterns in the frequency-domain.

NOTE | Diminishing Returns? Revisiting Perception of Computing Performance

Glen Anderson, Rina Doherty, Eric Baugh, *Intel Corporation, USA*

This paper presents data on user satisfaction as a function of computing performance for common tasks. It has implications for system designers who create products that must meet user expectations.

■ **TECHNICAL PRESENTATIONS | 215/216**

INTERACTION ON MOBILE DEVICES

SESSION CHAIR: Catalina Danis, *IBM Research*

PAPER | ShadowPuppets: Supporting Collocated Interaction with Mobile Projector Phones Using Hand Shadows

Lisa Cowan, *University of California, San Diego, USA*
Kevin Li, *AT&T Labs Research, USA*

We present ShadowPuppets, a system that supports collocated interaction with mobile projector phones. Shadow-Puppets allows users to cast hand shadows as input to mobile projector phones.

NOTE | DoubleFlip: A Motion Gesture Delimiter for Mobile Interaction

Jaime Ruiz, *University of Waterloo, Canada*
Yang Li, *Google Research, USA*

Presents DoubleFlip, a unique motion gesture designed as an input delimiter for mobile motion-based interaction. DoubleFlip provides an always-active input event for mobile interaction.

NOTE | Multi-User Interaction on Media Facades through Live Video on Mobile Devices

Sebastian Boring, *University of Munich, Germany*
Sven Gehring, *DFKI, Germany*
Alexander Wiethoff, Anna Magdalena Blöckner, *University of Munich, Germany*
Johannes Schöning, *DFKI, Germany*
Andreas Butz, *University of Munich, Germany*

Our prototype enables users to interact on media facades using their mobile device. We present extensions to allow for interaction of multiple users by superimposing individual feedback on live video.

NOTE | Interaction with Magic Lenses: Real-World Validation of a Fitts' Law Model

Michael Rohs, *LMU Munich, Germany*
Antti Oulasvirta, Tiia Suomalainen, *Helsinki Institute for Information Technology HIIT, Finland*

Empirically demonstrates that a Fitts' Law model for magic lens interaction developed in laboratory studies also applies in a real-world task with vastly different characteristics.

NOTE | Xpaaand: Interaction Techniques for Rollable Displays

Mohammadreza Khalilbeigi, Roman Lissermann, Max Mühlhäuser, Jürgen Steimle, *Technische Universität Darmstadt, Germany*

Presents a device concept, a prototype, and a set of interaction techniques for mobile devices that feature a rollable display. Allows people to interact with information by resizing the display.

NOTE | TapBack: Towards Richer Mobile Interfaces in Impoverished Contexts

Simon Robinson, *Swansea University, UK*
Nitendra Rajput, *IBM Research, India*
Matt Jones, *Swansea University, UK*
Anupam Jain, Shrey Sahay, Amit Nanavati, *IBM Research, India*

Demonstrates the potential for back-of-device inputs on existing, low-end phones in developing contexts. Suggests a basis to enhance the user experience for the dumb-phones common to billions of people.

NOTE | "ClearPlate" for Capturing Printed Information: A Scanner and Viewfinder in One Optical Unit

Atsuhiko Maeda, *NTT Cyber Solutions Laboratories, NTT Corporation, Japan*
Kenji Hara, *NTT Communications Corporation, Japan*
Minoru Kobayashi, *NTT Cyber Solutions Laboratories, NTT Corporation, Japan*
Masanobu Abe, *Okayama University, Japan*

Describes a new optical unit that combines a scanner with a viewfinder for handheld image capture devices. Can significantly outperform the camera-phone-based approach with regard to target acquisition.

■ **TECHNICAL PRESENTATIONS | 217/218/219**

SHORTCUTS COMMANDS & EXPERTISE

SESSION CHAIR: Bonnie John, *Carnegie Mellon University*

ToCHI | A Model of Novice and Expert Navigation Performance in Constrained Input Interfaces

Andy Cockburn, *University of Canterbury, New Zealand*
Carl Gutwin, *University of Saskatchewan, Canada*

PAPER | Dips and Ceilings: Understanding and Supporting Transitions to Expertise in User Interfaces

Joey Scarr, Andy Cockburn, *University of Canterbury, New Zealand*
Carl Gutwin, *University of Saskatchewan, Canada*
Philip Quinn, *University of Canterbury, New Zealand*

Analyses factors influencing expertise development with user interfaces, and describes the design and evaluation of a system called Blur that supports a rapid and sustained switch to expert interaction methods.

PAPER | Ambient Help

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

Describes a system which ambiently displays multiple videos and textual help resources on a secondary display. The system supports opportunistic learning by providing automatic, context-sensitive learning resources while a user works.

NOTE | Parameter Selection in Keyboard-Based Dialog Boxes

Jeff Hendy, Juliette Link, Kellogg Booth, Joanna McGrenere, *University of British Columbia, Canada*

Design and evaluation of a keyboard-based system for specifying parameters in GUI applications. Improves on previous keyboard-based systems by using the familiar visual feedback of dialog boxes.

NOTE | Categorization Costs for Hierarchical Keyboard Commands

Craig Miller, Svetlin Denkov, *DePaul University, USA*
Richard Omanson, *User Centric, USA*

Experiment reveals the time cost of choosing a menu category forhierarchical key sequences over a series of practice trials. Key sequences may not have a performance advantage over toolbars.

■ TECHNICAL PRESENTATIONS | 220/221/222

SOUND INTERACTIONS

SESSION CHAIR: Jeffrey Bigham, *University of Rochester*

PAPER | Sasayaki: Augmented Voice Web Browsing Experience

Daisuke Sato, *IBM Research Tokyo, Japan*
Shaojian Zhu, *UMBC, USA*
Masatomo Kobayashi, Hironobu Takagi, Chieko Asakawa, *IBM Research Tokyo, Japan*

Describes an auditory web browsing whereby the output is augmented by a secondary "whisper" of contextual information. Can increase information density and satisfaction of people who use auditory interface.

PAPER | On the Audio Representation of Radial Direction

Susumu Harada, Hironobu Takagi, Chieko Asakawa, *IBM Research Tokyo, Japan*

Presents a method for sonifying radial directions in auditory display systems, enabling shapes and directions to be perceived eyes-free. Viability of the approach validated in a longitudinal study.

PAPER | Multidimensional Gesture Sensing at the Piano Keyboard

Andrew McPherson, Youngmoo Kim, *Drexel University, USA*

Describes a musical keyboard interface sensing key motion in five dimensions identified from professional piano technique. User studies show the interface is intuitive, controllable and has novel musical applications.

NOTE | Spatialized Sound Enhances Biomechanically-Induced Self-Motion Illusion (Vection)

Bernhard E. Riecke, Daniel Feuereissen, *Simon Fraser University, Canada*
John J. Rieser, Timothy P. McNamara, *Vanderbilt University, USA*

First study combining auditory and biomechanical cues for self-motion illusions, yielding unexpectedly high synergistic effects. 3D auditory cues thus provide affordable yet effective ways of enhancing effectiveness of mediated environments.

NOTE | Name That Tune: Musicons as Reminders in the Home

Marilyn McGee-Lennon, *University of Glasgow, UK*
Maria Wolters, *University of Edinburgh, UK*
Ross McLachlan, Stephen Brewster, Cordelia Hall, *University of Glasgow, UK*

Empirical investigation of the memorability and learnability of Musicons - short snippets of music used as notifications demonstrating good recall and recognition, yet a more private way to present auditory information.

■ TECHNICAL PRESENTATIONS | 223/224

INNOVATION & DESIGN

SESSION CHAIR: Volkmar Pipek, *University of Siegen*

CASE STUDY | Measuring the Effectiveness of Social Media on an Innovation Process

Lester Holtzblatt, Mary Lou Tierney, *MITRE Corporation, USA*

We describe an evaluation of an online innovation management platform. Our findings suggest strategies for measuring the effectiveness of social media's impact within the context of a business strategy.

CASE STUDY | HCI and innovation

David Frohlich, *University of Surrey, UK*
Risto Sarvas, *Helsinki Institute for Information Technology, Finland*

The role of HCI in innovation is addressed through case studies of an old and new technology. Can help practitioners understand the historical and business context of their work.

CASE STUDY | Leading Change with Collaborative Design Workshops

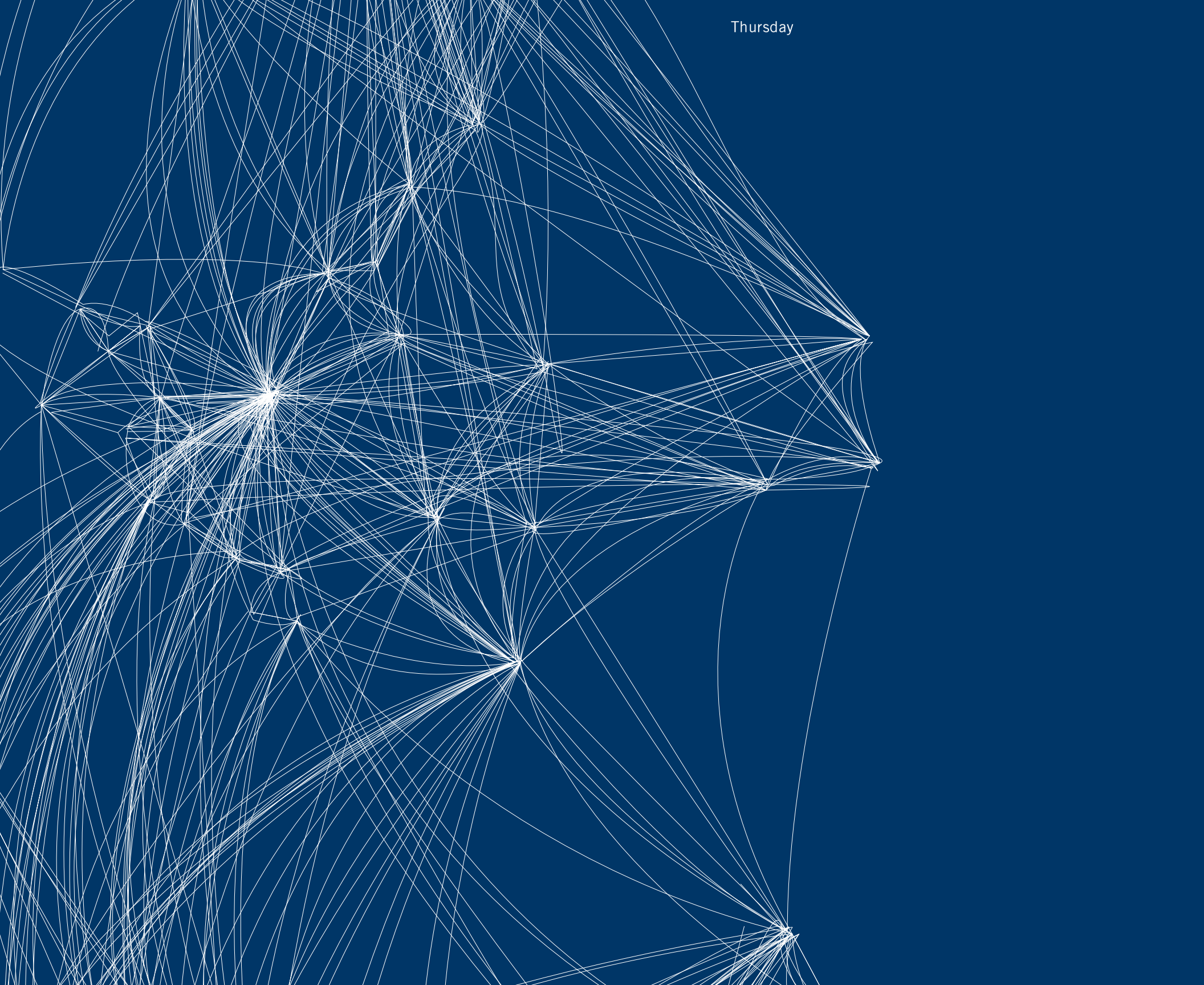
Jim Nieters, *Yahoo! Inc., USA*
Eric Bollman, *Yahoo! Inc., USA*

Coming up with a good idea does not mean you can get it to market. Design Labs enable designers to align a cross-functional team around game-changing ideas.

PAPER | Prototyping Dynamics: Sharing Multiple Designs Improves Exploration, Group Rapport, and Results

Steven Dow, Julie Fortuna, Dan Schwartz, *Stanford University, USA*
Beth Altringer, *Harvard University, USA*
Daniel L. Schwartz, Scott Klemmer, *Stanford University, USA*

Creating and sharing multiple alternatives with peers leads to more individual exploration, better integration of others' ideas, more productive design conversations, and higher-rated, better performing design results.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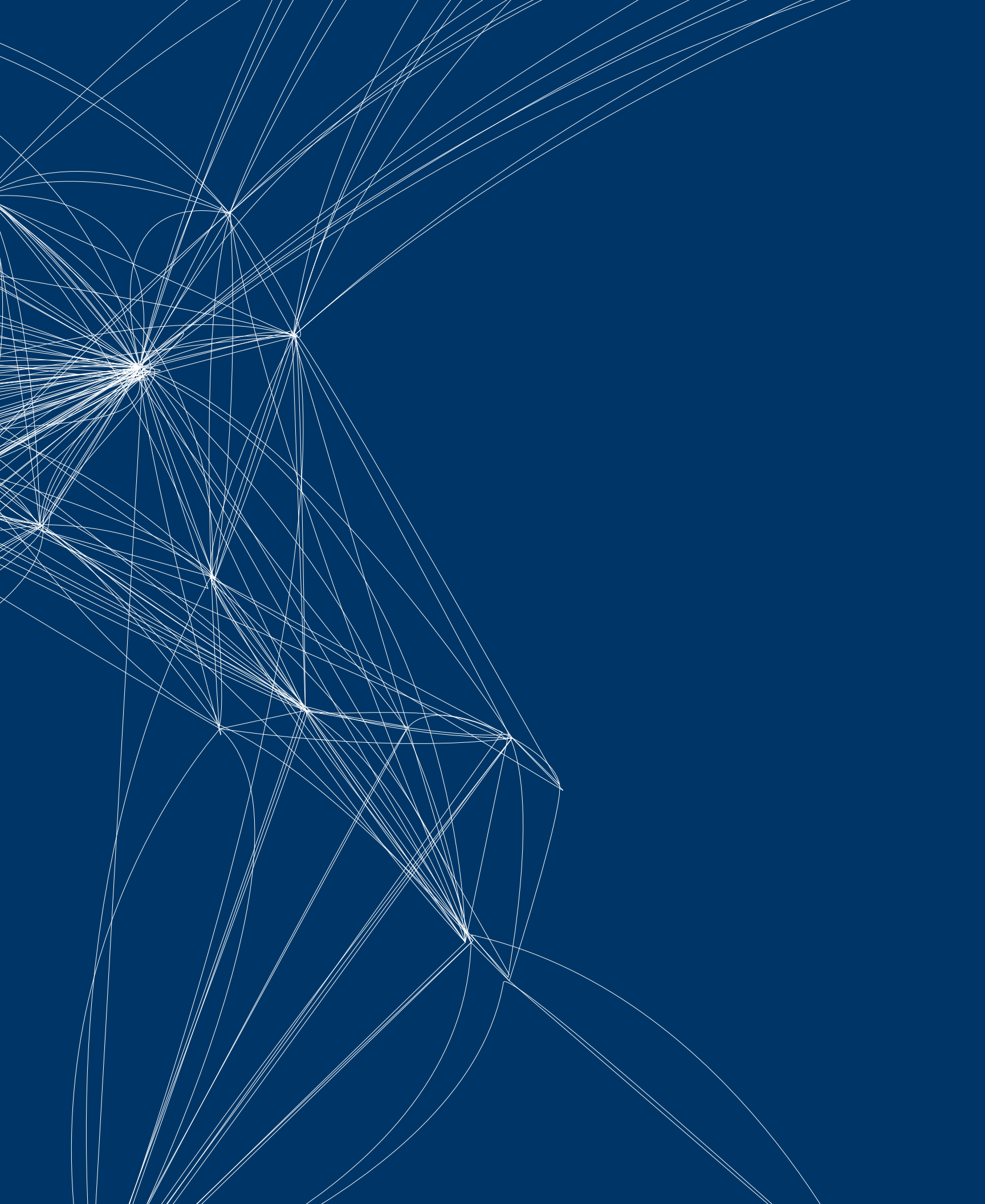

= 10 minutes (Note, short Case Study) = 12 minutes (alt.chi) = 20 minutes (Paper, ToCHI, long Case Study) = unscheduled time

	8:15–8:45	9:00–10:00	11:00–12:20	14:00–15:20	16:00–17:20
Ballroom A/B	**CHI Madness** Page 80	**Panel** Increasing Legal Requirements for Interface Accessibility Page 80	**Panel** Quality Control, on the Critique and Criticism of Design Research Page 83		**Closing Plenary Ethan Zuckerman** Desperately Seeking Serendipity Page 93
111/ 112		**Social Impact Award** Alan Newell: Older People, a Commercial Imperative Page 80	**SIG** Participatory Culture in the Age of Social Media Page 83	**SIG** Accessible Games Page 88	
119/ 120		**Invited Panel** Games and HCI Page 80	**Student Research Competition** Finalist Presentations Page 83	**Student Design Competition** Finalist Presentations Page 88	
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217/ 218/ 219		**Technical Presentations** Empowering Users in Developing Regions Page 81	**Technical Presentations** Software Development & Product Support Page 86	**Technical Presentations** Developers & End-user Programmers Page 91	
220/ 221/ 222		**Social Impact Award** Clayton Lewis: Technology, Diversity, Flexibility Page 82	**Technical Presentations** Multitasking & Interruption Page 86	**Technical Presentations** Incentives & User Generated Content Page 91	
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Technical Presentations include Paper, Note, Case Study and ToCHI presentations

Exhibits	Interactivity		Posters	Special Events	
Commons (Ballroom C/D) 10:00 - 13:30	**Interactivity 1** Commons (Ballroom C/D) 10:00 - 11:00	**Interactivity 2** (Rm 202/203/204) 10:00 - 11:00	**Workshops** (Registration Foyer) **Doctoral Consortium** (Registration Foyer)	**Interact with Poster Authors** (Registration Foyer) 10:00 - 11:00	**Buxton Collection** (Rm 201) 10:00 - 16:00

CHI MADNESS | BALLROOM A/B

8:15-8:45

SESSION CHAIRS:
Mira Dontcheva, *Adobe Systems*
Matt Jones, *Swansea University*
Max L. Wilson, *Swansea University*

CHI Madness returns to give everyone a lightning speed overview of the day's program.

■ **PANEL | BALLROOM A/B**

INCREASING LEGAL REQUIREMENTS FOR INTERFACE ACCESSIBILITY

PANELISTS

Dan Goldstein, Eve Hill, *Brown, Goldstein, Levy, LLP, USA*
Jonathan Lazar, *Towson University, USA*
Alice Siempelkamp, *Recovery Accountability and Transparency Board, USA*
Anne Taylor, *National Federation of the Blind, USA*
David Lepofsky, *Accessibility for Ontarians with Disabilities Act Alliance, Canada*

This CHI2011 panel offers a discussion of recent legal actions occurring related to interface accessibility, with leading accessibility lawyers as the panelists.

■ **SIGCHI AWARD TALK (INVITED) | 111/112**

OLDER PEOPLE - A COMMERCIAL IMPERATIVE

Alan Newell, *Dundee University, UK*
Social Impact Award

With a mild sense of déjà-vue, this lecture will address the challenges of devising HCI for older and disabled people in 2011, the rewards and benefits of this work, and the extent to which the CHI community addresses, and should further address, these needs.

■ **PANEL | 119/120**

GAMES AND HCI: PERSPECTIVES ON INTERSECTIONS AND OPPORTUNITIES

PANELISTS

Regina Bernhaupt, *IRIT, France*
Katherine Isbister, *NYU-Poly, USA*
John Buchanan, *Relic Entertainment, Canada*
Dan Cook, *Spry Fox, USA*
Dave Warfield, *Vancouver Film School, Canada*

This panel tackles questions about how games and HCI connect.

■ **TECHNICAL PRESENTATIONS | 208/209**

TABLETOP SYNCHRONOUS COLLABORATION

SESSION CHAIR: Sheelagh Carpendale, *University of Calgary*

PAPER | Enhancing Genomic Learning through Tabletop Interaction

Orit Shaer, *Wellesley College, USA*
Megan Strait, *Tufts University, USA*
Consuelo Valdes, Taili Feng, *Wellesley College, USA*
Michael Lintz, *Olin College of Engineering, USA*
Heidi Wang, *Wellesley College, USA*

Describes a tabletop user interface that fosters inquiry-based learning of genomics, and presents findings from a study that identifies four educational benefits of tabletop interaction compared to a multi-mouse GUI.

PAPER | Supporting Fluid Tabletop Collaboration across Distances

Naomi Yamashita, *NTT Communication Science Laboratories, Japan*
Hideaki Kuzuoka, *University of Tsukuba, Japan*
Keiji Hirata, Shigemi Aoyagi, Yoshinari Shirai, *NTT Communication Science Laboratories, Japan*

Describes how remote user's upper body view influence collaboration when multiple participants engage in distributed tabletop collaboration.

CASE STUDY | Prezi Meeting: Collaboration in a Zoomable Canvas Based Environment

Laszlo Laufer, *Budapest University of Technology and Economics, Hungary*
Peter Halacsy, Adam Somlai-Fischer, *Prezi Inc., USA*

Presents a real-time collaboration system for a zoomable presentation editor, called Prezi. Describing how the use of avatars in ZUI facilitates group awareness, articulation work and gamification of office tasks.

■ SPECIAL INTEREST GROUP | 210

USING EYE TRACKING FOR INTERACTION

ORGANIZERS

Anneli Olsen, *Tobii Technology AB, Sweden*
Albrecht Schmidt, *University Duisburg-Essen, Germany*
Paul Marshall, *University of Warwick, UK*
Veronica Sundstedt, *Blekinge Institute of Technology, Sweden*

■ TECHNICAL PRESENTATIONS | 211

SOCIAL Q & A

SESSION CHAIR: Scott Counts, *Microsoft Research*

PAPER | Effects of Community Size and Contact Rate in Synchronous Social Q&A

Ryen White, Matthew Richardson, *Microsoft Research, USA*
Yandong Liu, *Carnegie Mellon University, USA*

Longitudinal user study of a synchronous social Q&A system investigating the effects of contact rate and community size. Findings can help social Q&A system designers understand important cost-benefit tradeoffs.

PAPER | Redesign as an Act of Violence: Disrupted Interaction Patterns and the Fragmenting of a Social Q&A Community

Rich Gazan, *University of Hawaii, USA*

Case study describing the mass migration of established users from an online community after a redesign. Can assist designers in anticipating resistance and maintaining critical functionality.

PAPER | Design Lessons from the Fastest Q&A Site in the West

Lena Mamykina, *Columbia University, USA*
Bella Manoim, *Bard College, USA*
Manas Mittal, *University of California, Berkeley, USA*
George Hripcsak, *Columbia University, USA*
Björn Hartmann, *University of California, Berkeley, USA*

Study of a Q&A site for programmers, Stack Overflow, using mixed methods. Results show that both the technical design and community involvement of the designers are essential to success.

■ ALT.CHI | 212/213/214

ALT.CHI: IS THERE A DESIGNER IN THE HOUSE?

SESSION CHAIR: Amanda Williams, *University of California, Irvine*

alt.chi | Welcome to the Jungle: HCI After Dark

Christine Satchell, Marcus Foth, *Queensland University of Technology, Australia*

alt.chi | Action Role Design and Observations in a Gestural Interface-based Collaborative Game

Wooi-Boon Goh, Fitriani, Chun-Fan Goh, Jacquelyn Tan, Monica Menon, *Nanyang Technological University, Singapore*
Libby Cohen, *National Institute of Education, Singapore*

We discuss TUI-based interaction design patterns that use coupled-action role pairing to facilitate collaborative behavior in inclusive group settings. Case study-based observation are presented.

alt.chi | TaPS Widgets: Tangible Control over Private Spaces on Interactive Tabletops

Max Möllers, Ray Bohnenberger, Stephan Deininghaus, Patrick Zimmer, Karin Herrmann, Jan Borchers, *RWTH Aachen University, Germany*

We propose TaPS widgets, tangible controls for private spaces on tabletops. They scale well with additional users, require only low-cost hardware, and do not suffer from concurrent access conflicts.

alt.chi | Design Considerations of Expressive Bidirectional Telepresence Robots

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

In this paper, we present our iterative design approach toward an interactive bidirectional robot intermediaries along with application ideas and design considerations for telepresence robots.

alt.chi | On Ethical Problem Solving in User-Centered Research: An Analysis

Zarla Ludin, *Essential, Inc., USA*

This paper engages researchers in the ethics discussion beyond prescriptive solutions to ethical issues. Readers will learn the basis of the ethical treatment of participants and encourage further discussion.

■ TECHNICAL PRESENTATIONS | 217/218/219

EMPOWERING USERS IN DEVELOPING REGIONS

SESSION CHAIR: Lucia Terrenghi, *Google*

PAPER | Towards a Design Model for Women's Empowerment in the Developing World

Geeta Shroff, Matthew Kam, *Carnegie Mellon University, USA*

Five-stage model representing NGO engagement with low-income women in the developing world. Can be used to inform the design of technologies to complement NGO initiatives for women's empowerment.

CASE STUDY | Designing an E-Solution for Linking Informal Self-Help Groups in Africa – A Case Study

Mokeira Masita-Mwangi, Faith Ronoh-Boreh, Nyambura Kimani, Nancy Mwakaba, Grace Kihumba, Imelda Mueni, Jussi Impio, *Nokia Research Center, Africa, Kenya*

This case study documents development and use of technologies to facilitate emergent social practices and shows how HCI practitioners should exhibit competence working with unique social conditions.

■ **SIGCHI AWARD TALK (INVITED) | 220/221/222**

TECHNOLOGY, DIVERSITY, FLEXIBILITY

Clayton Lewis, *University of Colorado, USA*
Social Impact Award

Technology offers huge advantages for people whose needs and occasions differ from the "typical". Realizing the potential requires flexibility: making it possible for people to choose the tools that best meet their needs and preferences.

■ **TECHNICAL PRESENTATIONS | 223/224**

ORGANIZATIONS & DISTRIBUTED WORK

SESSION CHAIR: Judith S. Olson, *University of California, Irvine*

PAPER | Reuse in the Wild: an Empirical and Ethnographic Study of Organizational Content Reuse

Yelena Mejova, *University of Iowa, USA*
Klaar De Schepper, *Columbia University, USA*
Lawrence Bergman, Jie Lu, *IBM T.J. Watson Research Center, USA*

A large-scale study of content reuse networks in a large organization. Provides insight into organizational reuse patterns and guidance in building systems to support reuse.

PAPER | Do you KnowDis? A User Study of a Knowledge Discovery Tool for Organizations

Sven Laqua, M. Angela Sasse, *University College London, UK*
Carrie Gates, Steven Greenspan, *CA Technologies, USA*

Presents concept to replace traditional search by continuously fetching information relevant to user's activity and displaying it unobtrusively at the margins of the tool - here: reading and responding to email

PAPER | What's in a Move? Normal Disruption and a Design Challenge

Reza Zadeh, *Stanford University, USA*
Aruna Balakrishnan, Sara Kiesler, *Carnegie Mellon, USA*
Jonathon Cummings, *Duke University, USA*

A quantitative and qualitative study of 540 research teams that describes the predictors and disruptive consequences of team member relocation.

■ PANEL | BALLROOM A/B

QUALITY CONTROL: A PANEL ON THE CRITIQUE AND CRITICISM OF DESIGN RESEARCH

PANELISTS

Jodi Forlizzi, *Carnegie Mellon University, USA*
Carl DiSalvo, *Georgia Institute of Technology, USA*
Jeffrey Bardzell, *Indiana University Bloomington, USA*
Ilpo Koskinen, *Aalto University, Finland*
Stephan Wensveen, *Eindhoven University of Technology, Netherlands*

Leading researchers in design in HCI participate in a panel to increase awareness of the growing field of design research in HCI, and how to critique design research contributions.

■ SPECIAL INTEREST GROUP | 111/112

FROM SLACKTIVISM TO ACTIVISM: PARTICIPATORY CULTURE IN THE AGE OF SOCIAL MEDIA

ORGANIZERS

Dana Rotman, *University of Maryland, USA*
Sarah Vieweg, *University of Colorado, USA*
Sarita Yardi, *Georgia Institute of Technology, USA*
Ed Chi, *Google, USA*
Jenny Preece, Ben Shneiderman, *University of Maryland, USA*
Peter Pirolli, *PARC, USA*
Tom Glaisyer, *New American Foundation, USA*

■ STUDENT RESEARCH COMPETITION | 119/120

FINALIST PRESENTATIONS

Finalists in the competition will present their research followed by brief questions and answers with the judges. Winners will be announced during the closing plenary.

■ TECHNICAL PRESENTATIONS | 205/206/207

READING & WRITING

SESSION CHAIR: Wendy Mackay, *INRIA*

PAPER | Finders/Keepers: A Longitudinal Study of People Managing Information Scraps in a Micro-note Tool

Max Van Kleek, Wolfe Styke, *MIT, USA*
m.c. schraefel, *University of Southampton, UK*
David Karger, *MIT, USA*

Today's PIM tools only capture a small portion of the information people need to manage. We describe a longitudinal study of a micro-note tool that revealed potential directions for improvement.

PAPER | The Imposition and Superimposition of Digital Reading Technology: The Academic Potential of E-readers

Alexander Thayer, Charlotte Lee, Linda Hwang, Heidi Sales, Pausali Sen, Ninad Dalal, *University of Washington, USA*

Longitudinal qualitative study of students' integration of e-readers into academic reading practice. Contributes new knowledge regarding design considerations that limit the value of e-readers for academic use.

PAPER | Active Reading and Its Discontents: The Situations, Problems and Ideas of Readers

Craig Tashman, W. Keith Edwards, *Georgia Institute of Technology, USA*

Presents a study investigating the current state and difficulties people face in active reading, and brings the readers into the design process to explore improved future reading environments.

CASE STUDY | Bells, Whistles, and Alarms: HCI Lessons Using AJAX for a Page-turning Web Application

Juliet Hardesty, *Indiana University, USA*

Case study describing accessibility issues encountered using AJAX in a page-turning web application. Can help designers and developers using AJAX avoid creating inaccessible web applications.

■ TECHNICAL PRESENTATIONS | 208/209

ENGAGING YOUTH

SESSION CHAIR: Juan Pablo Hourcade, *University of Iowa*

PAPER | Exploratory Evaluations of a Computer Game Supporting Cognitive Behavioural Therapy for Adolescents

David Coyle, *University of Cambridge, UK*
Nicola McGlade, *University College Dublin, Ireland*
Gavin Doherty, *Trinity College Dublin, Ireland*
Gary O'Reilly, *University College Dublin, Ireland*

This paper provides an in-depth insight into the use of therapeutic computer games to support adolescent mental health interventions. It provides stronger evidence than previously available for their effectiveness and acceptability.

PAPER | In the Mood: Engaging Teenagers in Psychotherapy Using Mobile Phones

Mark Matthews, Gavin Doherty, *Trinity College Dublin, Ireland*

Can help designers to identify and address the factors influencing the use and success of mobile technology for teenagers attending clinical therapy.

PAPER | Breaking Boundaries: Strategies for Mentoring through Textile Computing Workshops

Stacey Kuznetsov, Laura Trutoiu, Casey Kute, Iris Howley, Eric Paulos, Dan Siewiorek, *Carnegie Mellon University, USA*

We use wearable electronics as creative and healing materials to engage with children at the socio-economic margins.

NOTE | African American Men Constructing Computing Identity

Betsy James DiSalvo, Sarita Yardi, Mark Guzdial, *Georgia Institute of Technology, USA*
Tom McKlin, *The Findings Group, USA*
Charles Meadows, Kenneth Perry, *Morehouse College, USA*
Amy Bruckman, *Georgia Institute of Technology, USA*

Describes a game testing program program for young African American men. New approach to influencing technology identity among non-dominant groups.

NOTE | Brick by Brick: Iterating Interventions to Bridge the Achievement Gap with Virtual Peers

Emilee Rader, Margaret Echelbarger, *Northwestern University, USA*
Justine Cassell, *Carnegie Mellon University, USA*

We describe an analysis of child-child language use, and report findings that inform the development of a virtual peer to help children learn to use "school English" and "school-ratified science talk".

■ **SPECIAL INTEREST GROUP | 210**

MANAGING UX TEAMS

ORGANIZERS

Janice Rohn, *Experian, USA*
Dennis Wixon, *Microsoft, USA*
Jim Nieters, *Yahoo!, USA*
Carola Thompson, *Mindjet, USA*

■ **TECHNICAL PRESENTATIONS | 211**

TANGIBLES

SESSION CHAIR: Patrick Baudisch, *Hasso Plattner Institute*

PAPER | Tangible Bots: Interaction with Active Tangibles in Tabletop Interfaces

Esben Pedersen, Kasper Hornbæk, *University of Copenhagen, Denmark*

Presents interaction techniques for active, motorized tangibles. Active tangibles can assist users by haptic feedback, by correcting errors, by multi-touch control, and by allowing efficient interaction with multiple tangibles.

PAPER | Geckos: Combining Magnets and Pressure Images to Enable New Tangible-object Design and Interaction

Jakob Leitner, Michael Haller, *Media Interaction Lab, Austria*

A tangible-object system combining magnets with a pressure-sensitive multitouch foil is described. It supports new interaction modalities based on pressure-changes, reconfigurable tangibles and it can be used on vertical surfaces.

PAPER | TUIC: Enabling Tangible Interaction on Capacitive Multi-touch Displays

Neng-Hao Yu, Li-Wei Chan, Seng Yong Lau, Sung-Sheng Tsai, I-Chun Hsiao, Dien-Je Tsai, Lung-Pan Cheng, Fang-I Hsiao, Mike Chen, Polly Huang, Yi-Ping Hung, *National Taiwan University, Taiwan*

Describes object sensing and tracking techniques with spatial and temporal coding on unmodified capacitive multitouch displays. Can help people design tangible interaction with multi-touch interface in a lightweight, thinner devices.

NOTE | tBox: A 3D Transformation Widget designed for Touch-screens

Aurélie Cohé, Fabrice Dècle, Martin Hachet, *INRIA - Université de Bordeaux CNRS (LaBRI), France*

Describes a technique that enhances manipulation of 3D content on touch-screens. Contributes to enlarge the current 3D expert desktop habits to new, broader usage and contexts.

NOTE | Rendering Physical Effects in Tabletop Controls

Malte Weiss, *RWTH Aachen University, Germany*
Christian Remy, *University of Zurich, Switzerland*
Jan Borchers, *RWTH Aachen University, Germany*

Simulates physical effects in passive tangible tabletop controls using electromagnetic actuation. Study shows that electromagnetic fields can be mapped to physical properties, such as friction, spring resistance, weight, and detents.

■ **TECHNICAL PRESENTATIONS | 212/213/214**

GROUPS AROUND THE TABLE

SESSION CHAIR: Kenton O'Hara, *CSIRO*

PAPER | Materializing the Query with Facet-Streams - A Hybrid Surface for Collaborative Search on Tabletops

Hans-Christian Jetter, Jens Gerken, Michael Zöllner, Harald Reiterer, *University of Konstanz, Germany*
Natasa Milic-Frayling, *Microsoft Research, UK*

Presents and evaluates the design of a tabletop for co-located collaborative product search. Uses tangibles, multi-touch and a filter/flow metaphor to bring the power of faceted search to tabletops.

PAPER | Gestures In-the-Wild: Studying Multi-Touch Gesture Sequences on Interactive Tabletop Exhibits

Uta Hinrichs, Sheelagh Carpendale, *University of Calgary, Canada*

Field study investigating how the choice and use of multi-touch gestures in public walk-up-and-use settings are influenced by interaction context and social context. Can assist in designing gestures sets.

PAPER | Rethinking 'Multi-User': An In-the-Wild Study of How Groups Approach a Walk Up-and-Use Tabletop in a Tourist Centre

Paul Marshall, *The University of Warwick, UK*
Richard Morris, Yvonne Rogers, Stefan Kreitmayer, *The Open University, UK*
Matt Davies, *user-x.com, UK*

An in-the-wild study of a multi-touch tabletop interface in a tourist centre. Questions the utility of the concept of 'multi-user' in public settings.

PAPER | The Effects of Interaction Techniques on Talk Patterns in Collaborative Peer Learning Around Interactive Tables

Izdihar Jamil, *University of Bristol, UK*
Kenton O'Hara, *Microsoft Research, UK*
Mark Perry, *Brunel University, UK*
Abhijit Karnik, Sriram Subramanian, *University of Bristol, UK*

Presents a user study investigating conversational patterns across three conditions of table-based interaction and provides insights into the design of interactive tables to support particular forms of social interaction.

■ **TECHNICAL PRESENTATIONS | 215/216**

REHABILITATION

SESSION CHAIR: Sunny Consolvo, *Intel Labs*

PAPER | Opportunities for Computing Technologies to Support Healthy Sleep Behaviors

Eun Kyoung Choe, *University of Washington, USA*
Sunny Consolvo, *Intel Labs Seattle, USA*
Nathaniel Watson, Julie Kientz, *University of Washington, USA*

Formative study exploring opportunities for technologies to support healthy sleep behaviors. A design framework for sleep technologies, design considerations and challenges are provided to help HCI researchers develop further ideas.

PAPER | How to Evaluate Technologies for Health Behavior Change in HCI Research

Predrag Klasnja, *University of Washington, USA*
Sunny Consolvo, *Intel Labs, USA*
Wanda Pratt, *University of Washington, USA*

We discusses how technologies for health behavior change should be evaluated within HCI research. We argue for targeted efficacy studies and qualitative understanding of in situ technology use.

PAPER | Motivating Mobility: Designing for Lived Motivation in Stroke Rehabilitation

Madeline Balaam, *Newcastle University, UK*
Stefan Rennick Egglestone, *University of Nottingham, UK*
Geraldine Fitzpatrick, *Vienna University of Technology, Austria*
Tom Rodden, *University of Nottingham, UK*
Ann-Marie Hughes, *University of Southampton, UK*
Anna Wilkinson, *Sheffield Hallam University, UK*
Thomas Nind, *University of Dundee, UK*
Lesley Axelrod, Eric Harris, *University of Sussex, UK*
Ian Ricketts, *University of Dundee, UK*
Susan Mawson, *Sheffield Hallam University, UK*
Jane Burridge, *University of Southampton, UK*

Describes the participatory design and in-home deployment of bespoke physical rehabilitation systems with four stroke survivors. Can assist designers in creating home rehab systems informed by rehabilitational and motivational needs.

PAPER | Group Pulmonary Rehabilitation Delivered to the Home via the Internet: Feasibility and Patient Perception

Andrea Taylor, *Glasgow School of Art, UK*
Angus Aitken, *LifeScan, UK*
David Godden, *University of Aberdeen, UK*
Judith Colligan, *NHS Highland, UK*

Describes a feasibility study to deliver group pulmonary rehabilitation to the home via the Internet, improving accessibility. Can assist others working in health care to develop home-based rehabilitation programs.

■ **TECHNICAL PRESENTATIONS | 217/218/219**

SOFTWARE DEVELOPMENT & PRODUCT SUPPORT

SESSION CHAIR: Keith Butler, *The Boeing Company*

CASE STUDY | Benefit Analysis of User Assistance Improvements

Erika Webb, Ray Matsil, Jeff Sauro, *Oracle, USA*

Describes a comparison study of a traditional, manual-based help system to our latest user assistance model. Presents a method to test the effectiveness of changes to show improved performance.

PAPER | Modern Software Product Support Processes and the Usage of Multimedia Formats

Parmit Chilana, *University of Washington, USA*
Tovi Grossman, George Fitzmaurice, *Autodesk Research, Canada*

We present results from a multi-dimensional analysis of software support at a large design company. Results illustrate modern support processes and the use of multimedia formats in remote issue resolution.

CASE STUDY | Orchestration of Ux Methods as Critical Success Factor in Large Scale Software Developments

Edmund Eberleh, Fazlul Hoque, *SAP AG, Germany*

Discusses our experiences on challenges of UI Design for large scale software development. Can assist designers in understanding the do's and dont's for such design contexts.

CASE STUDY | Evaluating eXtreme Scenario-based Design in a Distributed Agile Team

Jason Lee, *Meridium, Inc., USA*
Tejinder Judge, Donald McCrickard, *Virginia Tech, USA*

Reports on the use of eXtreme Scenario-based Design (XSBD), an integrated agile usability approach. Can assist enterprise-level organizations that need to efficiently develop usable software with distributed teams.

■ **TECHNICAL PRESENTATIONS | 220/221/222**

MULTITASKING & INTERRUPTION

SESSION CHAIR: Philippe Palanque, *Université de Toulouse*

PAPER | Ease of Juggling: Studying the Effects of Manual Multitasking

Antti Oulasvirta, Joanna Bergstrom-Lehtovirta, *Aalto University and University of Helsinki, Finland*

Presents a test for assessing the effects of design on multi-object manual performance. Shows that nominally similar interfaces (e.g., "one-handed input") can vary dramatically in terms of "ease of juggling"

ToCHI | OASIS: A Framework for Linking Notification Delivery to the Perceptual Structure of Goal-Directed Tasks

Shamsi Iqbal, *Microsoft Research, USA*
Brian Bailey, *University of Illinois at Urbana-Champaign, USA*

PAPER | Designing of Multimodal Feedback for Enhanced Multitasking Performance

Gerard Kim, Hyeong Cheol Kim, *Korea University, Republic of Korea*

The paper studies relationship between multitasking and multimodal feedback. Experimental results indicated multimodal feedback influenced multitasking performance, and non-redundant multimodal feedback was more effective than no multimodality or redundant multimodality.

NOTE | The Effects of Time Constraints on User Behavior for Deferrable Interruptions

Peter Bogunovich, Dario Salvucci, *Drexel University, USA*

Previous studies of multitasking have focused on cognitive load factors in interruptibility, yet other factors may exist. We investigate the influence of one such factor, time constraints, on multitasking behavior.

NOTE | Why Do I Keep Interrupting Myself?: Environment, Habit and Self-Interruption

Laura Dabbish, *Carnegie Mellon University, USA*
Gloria Mark, *University of California, Irvine, USA*
Víctor González, *Instituto Tecnológico Autónomo de México (ITAM), Mexico*

Describes analysis of self-interruption behavior from observational data of individuals across three high-technology information work environments. Results inform organizational practices and the design of productivity tools and intelligent notification systems.

■ **TECHNICAL PRESENTATIONS | 223/224**

ORGANIZATIONS & ENTERPRISE

SESSION CHAIR: John Tang, *Microsoft Research*

PAPER | Commentspace - Structured Support for Collaborative Visual Analysis

Wesley Willett, *University of California, Berkeley, USA*
Jeffrey Heer, *Stanford University, USA*
Joseph Hellerstein, Maneesh Agrawala, *University of California, Berkeley, USA*

Explores the impact of lightweight tag and link structure on collaborative visual analysis. Describes a system in which analysts can comment on visualizations and use tags/links to organize their findings.

PAPER | Supporting Collaborative Help for Individualized Use

Jina Huh, Mark Newman, Mark Ackerman, *University of Michigan, USA*

This paper discusses how collaborative sharing of configuration artifacts such as scripts, files, and error messages can be utilized to give help for individualized system settings.

PAPER | The Scale and Evolution of Coordination Needs in Large-Scale Distributed Projects: Implications for the Future Generation of Collaborative Tools

Jean Costa, *UFPA, Brazil*
Marcelo Cataldo, *Carnegie Mellon University, USA*
Cleidson de Souza, *IBM Research - Brazil, Brazil*

Data from five large-projects is used to study the scale, range, and volatility of the coordination requirements that developers face during their work. Can assist tool designers in collaborative tools.

NOTE | Topika: Integrating Collaborative Sharing with Email

Jalal Mahmud, Tara Matthews, *IBM Research - Almaden, USA*
Steve Whittaker, *University of California Santa Cruz, USA*
Tom Moran, Tessa Lau, *IBM Research - Almaden, USA*

Describes a system that integrates email with collaboration tools. Users may continue to use email while also enjoying the benefits of collaboration tools.

NOTE | Raconteur: Integrating Authored and Real-Time Social Media

Pei-Yu Chi, Henry Lieberman, *MIT, USA*

Raconteur is an enhanced chat system that introduces a new style of social media, "assisted conversation". It's augmented by an agent that interprets and suggests media elements to illustrate stories.

■ SPECIAL INTEREST GROUP | 111/112

ACCESSIBLE GAMES

ORGANIZERS

Arnold Lund, Annuska Perkins, *Microsoft, USA*
Sri Kurniawan, *Baskin School of Engineering, USA*
Lennart Nacke, *University of Saskatchewan, Canada*

The Accessible Games SIG will provide an opportunity for people working in the area of accessible games and entertainment or who can bring value to the area to meet and network, and to discuss future community building activities. A goal is to stimulate more collaboration in the accessible games area. In addition to sharing current work and identifying areas of common interest, a scenario focused exercise will be held that imagines a fully accessible networked virtual world game in order to uncover opportunities for research and innovation.

■ STUDENT DESIGN COMPETITION | 119/120

FINALIST PRESENTATIONS

The 4 finalists will give an oral presentation on their design to the panel of Student Design Competition Judges and CHI conference attendees. Winners will be announced during the closing plenary.

■ TECHNICAL PRESENTATIONS | 205/206/207

BOOKS & LANGUAGE

SESSION CHAIR: Matthew Kam, *Carnegie Mellon University*

PAPER | MicroMandarin: Mobile Language Learning in Context

Darren Edge, *Microsoft Research, China*
Elly Searle, *University of Washington, USA*
Kevin Chiu, *MIT Media Lab, USA*
Jing Zhao, *Peking University, China*
James Landay, *University of Washington, USA*

Presents a mobile flashcard application for learning a second language in real-world locations. Leveraging Foursquare to automatically suggest contextually-appropriate flashcards is shown to complement traditional learning practices.

PAPER | Augmenting the Web for Second Language Vocabulary Learning

Andrew Trusty, Khai Truong, *University of Toronto, Canada*

Exploration of how to augment information technologies to create micro-learning opportunities. Specifically demonstrates that a person's existing Web browsing experience can be leveraged to teach them second language vocabulary.

PAPER | Document Area Identification for Extending Books without Markers

Akihiro Miyata, Ko Fujimura, *NTT Corporation, Japan*

Describes a document area identification technique for making hyperlinks in books without markers. The technique yields high quality search by utilizing consecutive characters in the non-reading direction as search keys.

NOTE | The Reading Desk: Applying Physical Interactions to Digital Documents

Jennifer Pearson, *Swansea University, UK*
George Buchanan, *City University, UK*
Harold Thimbleby, *Swansea University, UK*

We demonstrate the positive impact of using a smaller set of multi-purpose tools for annotating documents, improving on the historically low use of annotation facilities for digital texts by users.

NOTE | ReadN'Karaoke: Visualizing Prosody in Children's Books for Expressive Oral Reading

Rupal Patel, William Furr, *Northeastern University, USA*

Describes a visualization technique of acoustic measures of prosody in line with written text. Can help children and other beginning readers learn to read aloud with better prosody.

■ TECHNICAL PRESENTATIONS | 208/209

PRIVACY

SESSION CHAIR: John Karat, *IBM Research*

PAPER | Situating the Concern for Information Privacy through an Empirical Study of Responses to Video Recording

David Nguyen, Aurora Bedford, Alexander Bretana, Gillian Hayes, *University of California, Irvine, USA*

We present an empirical study of perceptions of the concern for information privacy (CFIP) towards pervasive video recording. Issues drawn from our results can enrich and augment the CFIP model.

PAPER | We're in It Together: Interpersonal Management of Disclosure in Social Network Services

Airi Lampinen, Vilma Lehtinen, Asko Lehmuskallio, *Helsinki Institute for Information Technology, Aalto University, Finland*
Sakari Tamminen, *Software Business and Engineering Institute, Aalto University, Finland*

Presents a framework of strategies for managing disclosure in social network services. Informs both theoretical work and design practice that concerns the challenges related to privacy and publicness.

PAPER | Privacy Dictionary: A Linguistic Taxonomy of Privacy for Content Analysis

Alastair Gill, *University of Surrey, UK*
Asimina Vasalou, *University of Bath, UK*
Chrysanthi Papoutsi, *University of Oxford, UK*
Adam Joinson, *University of Bath, UK*

We construct and evaluate a new set of privacy-related categories for the semantic analysis of the privacy domain.

PAPER | Social and Technical Challenges in Parenting Teens' Social Media Use

Sarita Yardi, Amy Bruckman, *Georgia Institute of Technology, USA*

Describes a study of parenting challenges in teens' social media use. Presents social and technical strategies for managing teens' use.

■ **SPECIAL INTEREST GROUP | 210**

DESIGNING FOR THE USER EXPERIENCE OF SOCIABILITY IN MASSIVELY MULTIPLAYER ONLINE GAMES

ORGANIZERS

Georgios Christou, *European University Cyprus, Cyprus*
Panayiotis Zaphiris, *Cyprus University of Technology, Cyprus*
Chee Siang Ang, *University of Kent, UK*
Effie Lai-Chong Law, *ETH Zürich, Switzerland*

■ **TECHNICAL PRESENTATIONS | 211**

TACTILE INTERACTION

SESSION CHAIR: Anne Roudaut, *Hasso Plattner Institute*

PAPER | Enhancing Independence and Safety for Blind and Deaf-Blind Public Transit Riders

Shiri Azenkot, Sanjana Prasain, Alan Borning, Emily Fortuna, Richard Ladner, Jacob Wobbrock, *University of Washington, USA*

Interviews and a Braille-based system for blind and deaf-blind public transit riders. Presents a study of novel Braille-based applications and guidelines for design of interfaces for deaf-blind people.

PAPER | A Haptic Wristwatch for Eyes-Free Interactions

Jerome Pasquero, Scott Stobbe, Noel Stonehouse, *Research In Motion Limited, Canada*

Describes and validates a custom-made haptic wristwatch designed for eyes-free gestural communication with a smartphone. Introduces an interaction that allows users to query their device for numerical information at their convenience.

PAPER | Detecting Vibrations Across the Body in Mobile Contexts

Idin Karuei, Karon MacLean, Zoltan Foley-Fisher, Russell MacKenzie, *University of British Columbia, Canada*
Sebastian Koch, *Technische Universität Darmstadt, Germany*
Mohamed El-Zohairy, *University of British Columbia, Canada*

Comprehensively measures the effect of loci, movement, expectation on detection.Presents replicable experiment design to answer questions about vibrotactile communication and design guidelines for a given purpose.

NOTE | Tactile Feedback Can Assist Vision During Mobile Interactions

Jerome Pasquero, *Research In Motion Limited, Canada*
Vincent Hayward, *Université Pierre et Marie Curie, France*

A distributed tactile transducer that is included in a mobile device prototype allowed users to reduce their glances at the screen by 28% when scrolling through long lists.

NOTE | Designing Tactile Feedback for Piezo Buttons

Jani Lylykangas, Veikko Surakka, Katri Salminen, Jukka Raisamo, *University of Tampere, Finland*
Pauli Laitinen, Kasper Rönning, *Aito Interactive Inc., Finland*
Roope Raisamo, *University of Tampere, Finland*

Presents user preferences of piezo buttons with varied tactile feedback. Can help designers in selecting timing parameters for feedback provided by non-physical buttons.

■ TECHNICAL PRESENTATIONS | 212/213/214

TABLETOP & WALL DISPLAYS

SESSION CHAIR: Anne Marie Piper, *University of California, San Diego*

PAPER | LiquidText: A Flexible, Multitouch Environment to Support Active Reading

Craig Tashman, W. Keith Edwards, *Georgia Institute of Technology, USA*

Presents a multitouch document manipulation system to give readers more flexible ways to interact with text. We discuss the system, interaction techniques, design tradeoffs and our iterative design process.

PAPER | Dimensions of Collaboration on a Tabletop Interface for Children with Autism Spectrum Disorder

Leonardo Giusti, Massimo Zancanaro, *FBK, Italy*
Eynat Gal, Patrice Weiss, *University of Haifa, Israel*

Formative study describing development and assessment of a co-located interface for teaching social competence skills to children with high-functioning autism. Formulate lessons learned to design these types of applications.

PAPER | MemTable: An Integrated System for Capture and Recall of Shared Histories in Group Workspaces

Seth Hunter, Pattie Maes, *MIT Media Lab, USA*
Stacey Scott, *University of Waterloo, Canada*
Henry Kaufman, *Tactable Inc., USA*

Presents the design and evaluation of a tabletop system that supports capture and recall of shared histories. Demonstrates an integrated approach that emphasizes ergonomics, memory, and asynchronous review.

NOTE | Distinguishing Multiple Smart-Phone Interactions on a Multi-touch Wall Display using Tilt Correlation

William Hutama, Peng Song, Chi-Wing Fu, Wooi Boon Goh, *Nanyang Technological University, Singapore*

This paper proposes a novel matching technique, called tilt correlation, which employs the built-in tilt sensor on smart-phones to identify their concurrent contacts on a common multi-touch wall display.

NOTE | Through the Troll Forest: Exploring Tabletop Interaction Design for Children with Special Cognitive Needs

Ru Zarin, Daniel Fallman, *Interactive Institute, Sweden*

Describes Trollskogen, a tabletop system designed together with children diagnosed with Autism Spectrum Disorder and Down's syndrome. Can inspire designers in understanding how to involve users with special needs.

■ TECHNICAL PRESENTATIONS | 215/216

DOCTOR-PATIENT CARE

SESSION CHAIR: Gavin Doherty, *Trinity College Dublin*

PAPER | Exploring the Potential for Touchless Interaction in Image-Guided Interventional Radiology

Rose Johnson, *Open University, UK*
Kenton O'Hara, Abigail Sellen, *Microsoft Research, UK*

The paper presents an ethnographic study of image production and use during interventional radiology procedures. The findings are used to discuss opportunities for touchless interaction in sterile surgical environments.

PAPER | AnatOnMe: Facilitating Doctor-Patient Communication Using a Projection-Based Handheld Device

Tao Ni, *Virginia Tech, USA*
Amy Karlson, Daniel Wigdor, *Microsoft Research, USA*

Presents the user-centered design, development and evaluation of a projection-based tool for facilitating doctor-patient information exchange. Provides inspiration and understanding of opportunities for handheld technologies in clinical settings.

PAPER | Unpacking Exam-Room Computing: Negotiating Computer-Use in Patient-Physician Interactions

Yunan Chen, Victor Ngo, Sidney Harrison, Victoria Duong, *University of California, Irvine, USA*

We examine the impact of "Computer-on-Wheels" (COWs) in exam-rooms. The findings suggest using micro-negotiations as a way to facilitate patient-provider interactions and encourage patient participation.

PAPER | CPOE Workarounds, Boundary Objects, and Assemblages

Xiaomu Zhou, *Rutgers University, USA*
Mark Ackerman, Kai Zheng, *University of Michigan, USA*

An ethnographic study investigating clinician workarounds of a computerized prescriber order entry system. Contribute to an improved understanding of workarounds issues from the perspectives of boundary objects and information assemblage.

■ **TECHNICAL PRESENTATIONS | 217/218/219**

DEVELOPERS & END-USER PROGRAMMERS

SESSION CHAIR: Andrew Ko, *University of Washington*

PAPER | Wrangler: Interactive Visual Specification of Data Transformation Scripts

Sean Kandel, Andreas Paepcke, *Stanford University, USA*
Joseph Hellerstein, *University of California, Berkeley, USA*
Jeffrey Heer, *Stanford University, USA*

Introduces Wrangler, a data manipulation tool that combines a mixed-initiative interface with an underlying declarative transformation language. Contributes techniques for suggesting data transforms from user selections and visualizing transform effects.

PAPER | The Concept Maps Method as a Tool to Evaluate the Usability of APIs

Jens Gerken, Hans-Christian Jetter, Michael Zöllner, Martin Mader, Harald Reiterer, *University of Konstanz, Germany*

We present the Concept Maps method to elicit the programmer's mental-model of an API. This allows us to identify usability issues as well as how these are changing over time.

PAPER | Shared Substance: Developing Flexible Multi-Surface Applications

Tony Gjerlufsen, *Aarhus University, Université Paris-Sud, Denmark*
Clemens Klokmose, James Eagan, Clément Pillias, Michel Beaudouin-Lafon, *Université Paris-Sud, France*

A middleware for developing flexible multi-surface applications combining data-orientation with distributed sharing of data and functionality. The combination provides great flexibility for users and developers at both design- and run-time.

NOTE | OldGen: Mobile Phone Personalization for Older Adults

Alex Olwal, Dimitris Lachanas, Ermioni Zacharouli, *KTH, Sweden*

Prototype framework to enable accessibility features on generic mobiles by decoupling software UI from physical form. Can make generic phones more customizable and usable for the elderly and disabled.

NOTE | Dinah: An Interface to Assist Non-Programmers with Selecting Program Code Causing Graphical Output

Paul Gross, *Washington University in St. Louis, USA*
Jennifer Yang, *University of Washington, USA*
Caitlin Kelleher, *Washington University in St. Louis, USA*

Describes an interface that assists non-programmers with selecting program code responsible for graphical output. Can enable non-programmers to effectively reuse and learn from widely available program examples.

■ **TECHNICAL PRESENTATIONS | 220/221/222**

INCENTIVES & USER GENERATED CONTENT

SESSION CHAIR: Robert Kraut, *Carnegie Mellon University*

PAPER | Normative Influences on Thoughtful Online Participation

Abhay Sukumaran, *Stanford University, USA*
Stephanie Vezich, *UCLA, USA*
Melanie McHugh, Clifford Nass, *Stanford University, USA*

Describes two experiments on using norms to induce thoughtful participation during online commenting. Normative effects stemming from social behavior and website design are tested.

PAPER | My Kind of People? Perceptions About Wikipedia Contributors and Their Motivations

Judd Antin, *Yahoo! Research, USA*

Describes perceptions among Wikipedia readers and casual editors about active Wikipedians' characteristics and motivations. Illustrates how these perceptions can be a barrier to participation.

PAPER | Computers Can't Give Credit: How Automatic Attribution Falls Short in an Online Remixing Community

Andrés Monroy-Hernández, Benjamin Mako Hill, *MIT, USA*
Jazmin Gonzalez-Rivero, danah boyd, *Microsoft Research, USA*

Mixed-method study describing attribution and credit-giving in a user-generated content community for young people. Findings illustrate opportunities and limitations for the design of remixing communities.

NOTE | Identifying Shared Leadership in Wikipedia

Haiyi Zhu, Robert Kraut, Yi-Chia Wang, Aniket Kittur, *Carnegie Mellon University, USA*

Develops and validates a set of machine learning tools that enable the measurement of different types of shared leadership behaviors at scale.Demonstrates the distributed nature of leadership in Wikipedia.

NOTE | Donate for Credibility: How Contribution Incentives Can Improve Credibility

Gary Hsieh, *Michigan State University, USA*
Scott Hudson, Robert Kraut, *Carnegie Mellon University, USA*

Experiment explores how contribution incentives can affect the credibility of contributors to online user-generated content. Can assist in developing reward systems for user-contribution.

■ **TECHNICAL PRESENTATIONS | 223/224**

COURRIEL

SESSION CHAIR: Laura Dabbish, *Carnegie Mellon University*

PAPER | Should I Open this Email?: Inbox-Level Cues, Curiosity and Attention to Email

Jaclyn Wainer, Laura Dabbish, Robert Kraut, *Carnegie Mellon University, USA*

Describes think-aloud study and experiment examining why people attend to some emails and not others based on inbox-level cues about message content. Results inform prioritization algorithms and email client design.

PAPER | Am I Wasting My Time Organizing Email? A Study of Email Refinding

Steve Whittaker, Tara Matthews, *IBM Research - Almaden, USA*
Julian Cerruti, Hernan Badenes, *IBM Research - Argentina, Argentina*
John Tang, *Microsoft Research, USA*

Large scale quantitative field study of email refinding, showing filing to be inefficient, but threading effective. Design implications include better support for scrolling and enhanced threading.

PAPER | Using Email to Facilitate Wiki-based Coordinated, Collaborative Authoring

Changyan Chi, *IBM Research - China, China*
Michelle Zhou, *IBM Research - Almaden, USA*
Wenpeng Xiao, Min Yang, *IBM Research - China, China*
Eric Wilcox, *IBM Research - Almaden, USA*

Integrates email with wiki to facilitate the collaborative authoring, and develops a semi-structured, template-based approach to email understanding. It motivates participation and discourages abandonment of potentially useful tools for added benefits.

PAPER | F for Fake: Four Studies on How We Fall for Phish

Mark Blythe, *University of Northumbria, UK*
Helen Petrie, John Clark, *University of York, UK*

Four studies consider why we continue to fall for phish: a content analysis of an archive of phish, an online survey, interviews with blind email users and a literary analysis.

About Ethan Zuckerman

Ethan Zuckerman is a senior researcher at the Berkman Center for Internet and Society at Harvard University and a fellow at MIT's Center for Future Civic Media. His research focuses on the distribution of attention in mainstream and new media, the use of technology for international development, and the use of new media technologies by activists.

With Rebecca MacKinnon, Ethan co-founded international blogging community Global Voices. Global Voices showcases news and opinions from citizen media in over 150 nations and thirty languages, publishing editions in twenty languages. Through Global Voices, Ethan is active in efforts to promote freedom of expression and fight censorship in online spaces.

In 2000, Ethan founded Geekcorps, a technology volunteer corps that sends IT specialists to work on projects in developing nations, with a focus on West Africa. Previously Ethan helped found Tripod.com, one of the web's first "personal publishing" sites. He blogs at http://ethanzuckerman.com/blog and lives in the Berkshire Mountains of western Massachusetts, USA with his wife, son and a small, fluffy cat.

CLOSING PLENARY – BALLROOM A/B

16:00-17:20

DESPERATELY SEEKING SERENDIPITY

Ethan Zuckerman

Senior Researcher, *Berkman Center for Internet and Society, Harvard University*

Fellow, *Center for Future Civic Media, MIT*

Co-founder, *Global Voices;* Founder, *Geekcorps*

The spread of social media has put powerful publishing tools in the hands of people around the world. The democratization of publishing makes it possible to encounter news and perspectives from far beyond our national borders. But social media also encourages us to pay attention to what friends find interesting and compelling, which often reinforces our existing prejudices and preconceptions. Whether social media broadens our world or narrows it is a function both of how we navigate this new landscape and what the tools we build make it easy or hard to do.

Technologists have spent a great deal of time trying to control a flood of user-produced information with filters. But more dangerous than "filter failure" may be filters that work too well and insulate us in informational echo chambers. We need better tools for serendipity, to help us encounter the unexpected, provocative and helpful from outside our information orbits. The inspiration for engineering serendipity may not come from the organization of information, but from the organization of physical space, and from one of our earliest communication technologies: the city.

Notes

Interactivity/Videos
Posters/Exhibits

CHI 2011 INTERACTIVITY

Interactivity Demos and Performances

Interactivity is your chance to fully engage at a personal level by seeing, touching, squeezing, hearing or even smelling interactive visions for the future. There are two sets of interactive demonstration exhibits this year: Interactivity 1 and Interactivity 2. Descriptions of these interactive demonstrations follow the locations and hours listed below.

Locations

Interactivity 1
Commons (Ballroom C/D, Level 1)

Interactivity 2
Rooms 202/203/204 (Level 2)
Level 2 Foyer (in addition on Tuesday evening)

Hours

Monday
Interactivity 1 (only)
17:30 – 19:30

Tuesday
Interactivity 1 & 2
10:00 – 11:00
15:20 – 16:00

Interactivity 2 (only)
17:30 – 20:00

Wednesday
Interactivity 1 & 2
10:00 – 11:00
15:20 – 16:00

Thursday
Interactivity 1 & 2
10:00 – 11:00

INTERACTIVITY 1

Ubiquitous Voice Synthesis: Interactive Manipulation of Speech and Singing on Mobile Distributed Platforms i101

Nicolas d'Alessandro, Robert Pritchard, Johnty Wang, Sidney Fels,
University of British Columbia, Canada

Vocal production is one of the most ubiquitous and expressive activities of people, yet understanding its production and synthesis remains elusive. When vocal synthesis is elevated to include new forms of singing and sound production, fundamental changes to culture and musical expression emerge. Nowadays, Text-To-Speech (TTS) synthesis seems unable to suggest innovative solutions for new computing trends, such as mobility, interactivity, ubiquitous computing or expressive manipulation. We describe our pioneering work in developing interactive voice synthesis beyond the TTS paradigm. We present DiVA and HandSketch as our two current voice-based digital musical instruments. We then discuss the evolution of this performance practice into a new ubiquitous model applied to voice synthesis, and we describe our first prototype using a mobile phone and wireless embodied devices in order to allow a group of users to collaboratively produce voice synthesis in real-time.

Snaplet: Using Body Shape to Inform Function in Mobile Flexible Display Devices i102

Aneesh Tarun, *Queen's University, Canada*
Byron Lahey, *Arizona State University, USA*
Audrey Girouard, *Queen's University, Canada*
Winslow Burleson, *Arizona State University, USA*
Roel Vertegaal, *Queen's University, Canada*

With recent advances in flexible displays, computer displays are no longer restricted to flat, rigid form factors. In this paper, we propose that the physical form of a flexible display, depending on the way it is held or worn, can help shape its current functionality. We propose Snaplet, a wearable flexible E Ink display augmented with sensors that allow the shape of the display to be detected. Snaplet is a paper computer in the form of a bracelet. When in a convex shape on the wrist, Snaplet functions as a watch and media player. When held flat in the hand it is a PDA with notepad functionality. When held in a concave shape Snaplet functions as a phone. Calls are dropped by returning its shape to a flat or convex shape.

MudPad: Tactile Feedback for Touch Surfaces i103

Yvonne Jansen, *INRIA, France*
Thorsten Karrer, Jan Borchers, *RWTH Aachen University, Germany*

MudPad is a system enriching touch surfaces with localized active haptic feedback. A soft and flexible overlay containing magnetorheological fluid is actuated by an array of electromagnets to create a variety of tactile sensations. As each magnet can be controlled individually, we are able to produce feedback in realtime locally at arbitrary points of interaction.

i*Chameleon: A Scalable and Extensible Framework for Multimodal Interaction i104

Wai Wa Tang, Kenneth W.K. Lo, Alvin T.S. Chan, Stephen Chan, Hong Va Leong, Grace Ngai, *The Hong Kong Polytechnic University, Hong Kong*

i*Chameleon is a multimodal interaction framework that enables programmers to readily prototype and test new interactive devices or interaction modes. It allows users to customize their own desktop environment for interaction beyond the usual KVM devices, which would be particularly useful for users with difficulty using the keyboard and mouse, or for systems deployed in specialized environments. This is made possible with the engineering of an interaction framework that distills the complexity of control processing to a set of semantically-rich modal controls that are discoverable, composable and adaptable. The framework can also be used for developing new applications with multimodal interactions, for example, distributed applications in collaborative environments or robot control.

Immersive VR: A Non-pharmacological Analgesic for Chronic Pain? i105

Diane Gromala, Meehae Song, Ji-Dong Yim, Tyler Fox, *Simon Fraser University, Canada*
Steven Barnes, *University of British Columbia, Canada*
Mark Nazemi, Chris Shaw, *Simon Fraser University, Canada*
Pam Squire, *University of British Columbia, Canada*

We describe the research work being carried out by the Transforming Pain Research Group – the only group whose work is entirely focused on the use of immersive VR for chronic pain management. Unlike VR research for acute or short-term pain, which relies on pain "distraction," this research posits a new paradigm for the use of VR. In addition to providing an overview of our work, the present paper also describes one of our current works in detail: the Virtual Meditative Walk.

Tactile Display for the Visually Impaired Using TeslaTouch i106

Cheng Xu, *Disney Research, Carnegie Mellon University, USA*
Ali Israr, Ivan Poupyrev, Olivier Bau, *Disney Research, USA*
Chris Harrison, *Disney Research, Carnegie Mellon University, USA*

TeslaTouch is a technology that provides tactile sensation to moving fingers on touch screens. Based on TeslaTouch, we have developed applications for the visually impaired to interpret and create 2D tactile information. We demonstrate these applications, present observations from the interaction, and discuss TeslaTouch's potential in supporting communication among visually impaired individuals.

ChronoViz: A System for Supporting Navigation of Time-coded Data i107

Adam Fouse, Nadir Weibel, Edwin Hutchins, James Hollan, *University of California, San Diego, USA*

We present ChronoViz, a system to aid annotation, visualization, navigation, and analysis of multimodal time-coded data. Exploiting interactive paper technology, ChronoViz also integrates researcher's paper notes into the composite data set. Researchers can navigate data in multiple ways, taking advantage of synchronized visualizations and annotations. The goal is to decrease the time and effort required to analyze multimodal data by providing direct indexing and flexible mechanisms to control data exploration.

TagURIt: A Proximity-based Game of Tag Using Lumalive e-Textile Displays i108

Sylvia Cheng, Kibum Kim, Roel Vertegaal, *Queen's University, Canada*

We present an electronic game of tag that uses proximity sensing and Lumalive displays on garments. In our game of tag, each player physically represents a location-tagged Universal Resource Indicator (URI). The URIs, one chaser and two target players, wear touch-sensitive Lumalive display shirts. The goal of the game is for the chaser to capture a token displayed on one of the Lumalive shirts, by pressing a touch sensor located on the shirt. When the chaser is in close proximity to the token player, the token jumps to the shirt of the second closest player, making this children's game more challenging for adult players. Our system demonstrates the use of interactive e-textile displays to remove the technological barrier between contact and proximity in the real world, and the seamless representation of gaming information from the virtual world in that real world.

■ INTERACTIVITY 2

Obfuscating Authentication Through Haptics, Sound and Light i201

Andrea Bianchi, *Korea Advanced Institute of Science and Technology, Republic of Korea*
Ian Oakley, *Madeira Interactive Technologies Institute, University of Madeira, Portugal*
Dong-Soo Kwon, *Korea Advanced Institute of Science and Technology, Republic of Korea*

Sensitive digital content associated with or owned by individuals now pervades everyday life. Mediating accessing to it in ways that are usable and secure is an ongoing challenge. We present a series of five PIN entry and transmission systems that address observation attacks in public spaces via shoulder surfing or camera recording. They do this through the use of novel modalities including audio cues, haptic cues and modulated visible light. Each prototype is introduced and motivated, and its strengths and weaknesses are considered.

ZeroTouch: A Zero-Thickness Optical Multi-Touch Force Field i202

Jon Moeller, Andruid Kerne, Sashikanth Damaraju, *Texas A&M University, USA*

We present zero-thickness optical multi-touch sensing, a technique that simplifies sensor display integration, and enables new forms of interaction not previously possible with other multi-touch sensing techniques. Using low-cost modulated infrared sensors to quickly determine the visual hull of an interactive area, we enable robust real-time sensing of fingers and hands, even in the presence of strong ambient lighting. Our technology allows for 20+ fingers to be detected, many more than through prior visual hull techniques, and our use of wide-angle optoelectonics allows for excellent touch resolution, even in the corners of the sensor. With the ability to track objects in free space, as well as its use as a traditional multi-touch sensor, ZeroTouch opens up a new world of interaction possibilities.

MediaDiver: Viewing and Annotating Multi-View Video i203

Gregor Miller, Sidney Fels, Abir Al Hajri, Michael Ilich, Zoltan Foley-Fisher, Manuel Fernandez, *University of British Columbia, Canada*
Daesik Jang, *Kunsan National University, Republic of Korea*

Our novel rich media interface called MediaDiver demonstrates our new interaction techniques for viewing and annotating multiple view video. The demonstration allows attendees to experience novel moving target selection methods (called Hold and Chase), new multi-view selection techniques, automated quality of view analysis to switch viewpoints to follow targets, integrated annotation methods for viewing or authoring meta-content and advanced context sensitive transport and timeline functions. As users have become increasingly sophisticated when managing navigation and viewing of hyper-documents, they transfer their expectations to new media. We demonstrate the technology required to meet these expectations for video. Thus users will be able to directly click on objects in the video to link to more information or other video, easily change camera views and mark-up the video with their own content. The applications of this technology stretch from home video management to broadcast quality media production, which may be consumed on both desktop and mobile platforms.

Blinky Blocks: A Physical Ensemble Programming Platform i204

Brian Kirby, Michael Ashley-Rollman, Seth Goldstein, *Carnegie Mellon University, USA*

A major impediment to understanding programmable matter is the lack of an existing system with sufficiently many modules of sufficient capabilities. We present the requirements of physically distributed ensembles and discuss the use of the distributed programming language Meld to program ensembles of these units. We demonstrate a new system designed to meet these requirements called Blinky Blocks and discuss the hardware design we used to create 100 of these modules.

Frictional Widgets: Enhancing Touch Interfaces With Programmable Friction i205

Vincent Levesque, Louise Oram, Karon MacLean, *University of British Columbia, Canada*
Andy Cockburn, *University of Canterbury, New Zealand*
Nicholas Marchuk, Dan Johnson, J. Edward Colgate, Michael Peshkin, *Northwestern University, USA*

Touch interactions occur through flat surfaces that lack the tactile richness of physical interfaces. We explore the design possibilities offered by augmenting touchscreens with programmable surface friction. Four exemplar applications – an alarm clock, a file manager, a game, and a text editor – demonstrate tactile effects that improve touch interactions by enhancing physicality, performance, and subjective satisfaction.

Touch and Copy, Touch and Paste i206

Pranav Mistry, Suranga Nanayakkara, Pattie Maes, *MIT Media Lab, USA*

SPARSH explores a novel interaction method to seamlessly transfer data between digital devices in a fun and intuitive way. The user touches whatever data item he or she wants to copy from a device. At that moment, the data item is conceptually saved in the user. Next, the user touches the other device he or she wants to paste/pass the saved content into. SPARSH uses touch-based interactions as indications for what to copy and where to pass it. Technically, the actual transfer of media happens via the information cloud.

Mouseless – A Computer Mouse as Small as Invisible i207

Pranav Mistry, Pattie Maes, *MIT Media Lab, USA*

Mouseless is a novel input device that provides the familiarity of interaction of a physical computer mouse without requiring a real hardware mouse. It consists of an IR laser beam and an IR camera, both of which are embedded in a computer. Mouseless proposes a number of novel additional gestural interactions while supporting all the conventional computer mouse interactions. We present the design and implementation of various Mouseless prototype systems.

Galvanic Skin Response-Derived Bookmarking of an Audio Stream i208

Matthew Pan, Gordon Jih-Shiang Chang, Gokhan Himmetoglu, AJung Moon, Thomas Hazelton, Karon MacLean, Elizabeth Croft, *The University of British Columbia, Canada*

We demonstrate a novel interaction paradigm driven by implicit, low-attention user control, accomplished by monitoring a user's physiological state. We have designed and prototyped this interaction for a first use case of bookmarking an audio stream, to holistically explore the implicit interaction concept. A listener's galvanic skin conductance (GSR) is monitored for orienting responses (ORs) to external interruptions; our research prototype then automatically bookmarks the media such that the user can attend to the interruption, then resume listening from the point he/she is interrupted.

3D-Press - Tangible 3D Haptics on Touch Surfaces:Virtual Compliance i209

Johan Kildal, *Nokia Research Center, Finland*

Suitability of current haptic three-dimensional user interface (3D-UI) technologies is low for mobile interaction. 3D-Press in reviewed in this paper: a technique to create the haptic illusion that when pressing on a rigid surface is feels compliant. The fact that the illusion is intramodal (haptics only involved in creating it), and that the technology required is simple and with low energy demands, makes it ideal for mobile use. The parameters used in the implementation of 3D-Press influence the characteristics of the illusion.

RayMatic: Ambient Meter Display with Facial Expression and Gesture i210

Ray Yun, Mark Gross, *Carnegie Mellon University, USA*

We present an experimental thermostat display that moves beyond a conventional, number-based interface. It explores an approach to engaging and emotional human-computer interaction through facial expression and gesture. Using sensors and touch technology, an ordinary picture frame becomes an interactive meter and conveys environmental information as an ambient display.

SnowGlobe: A Spherical Fish-Tank VR Display i211

John Bolton, Kibum Kim, Roel Vertegaal, *Queen's University, Canada*

We present a spherical display with Fish-Tank VR as a means for interacting with three- dimensional objects. We implemented the spherical display by reflecting a projected image off a hemispherical mirror, allowing for a seamless curvilinear display surface. Diffuse illumination is used for detecting touch points on the sphere. The user's head position and the position of the sphere are also tracked using a Vicon motion capture device. Users can perform multi-touch gestures to interact with 3D content on the spherical display. Our system relies on the metaphor of a snow globe. Users can walk around a display while maintaining motion parallax corrected viewpoints of the object on the display. They can interact with the 3D object using multitouch interaction techniques, allowing for rotating and scaling of the 3D model on the display.

INVISQUE: Intuitive Information Exploration through Interactive Visualization i212

B L William Wong, Raymond Chen, Neesha Kodagoda, Chris Rooney, Kai Xu, *Middlesex University, UK*

We present INVISQUE, a novel system designed for interactive information exploration. Instead of a conventional list-style arrangement, in INVISQUE information is represented by a two-dimensional spatial canvas, with each dimension representing user-defined semantics. Search results are presented as index cards, ordered in both dimensions. Intuitive interactions are used to perform tasks such as keyword searching, results browsing, categorizing, and linking to online resources such as Google and Twitter. The interaction-based query style also naturally lends the system to different types of user input such as multi-touch gestures. As a result, INVISQUE gives users a much more intuitive and smooth experience of exploring large information spaces.

Coco - The Therapy Robot i213

Katharina Tran phuc, Torsten Racky, Florian Roth, Iris Wegmann, Christoph Busch, Claudia Söller-Eckert, Mara Pilz, Katharina Horst, *University of Applied Sciences Darmstadt, Germany*

Coco is a therapeutic robot designed for elderly people in nursing homes or other care facilities. It is an electronic pet that represents a friend and helper who animates, reminds and motivates its owner. He has 4 main functions: reading, singing, a calendar function and quiz games and can be operated by voice, remote control or base buttons. Pressure sensors in Coco's back react to touch. He interacts with his owner on his own initiative, suggesting to read, sing or play. Coco's memory and activity settings can be customised by carers or relatives. The prototype was implemented with Lego Mindstorms and successfully tested by a focus group.

■ INTERACTIVITY SPECIAL PERFORMANCE

humanaquarium: Exploring Audience, Participation, and Interaction

Foyer (Level 2)
Tuesday, 17:30 – 20:00

Robyn Taylor, *University of Alberta, Canada*
Guy Schofield, John Shearer, Jayne Wallace, Peter Wright, *Newcastle University, UK*
Pierre Boulanger, *University of Alberta, Canada*
Patrick Olivier, *Newcastle University, UK*

humanaquarium is a movable performance space designed to explore the dialogical relationship between artist and audience. Two musicians perform inside the cube-shaped box, collaborating with participants to co-create an aesthetic audio-visual experience. The front wall of the humanaquarium is a touch-sensitive FTIR window. Max/MSP is used to translate the locations of touches on the window into control data, manipulating the tracking of software synthesizers and audio effects generated in Ableton Live, and influencing a Jitter visualization projected upon the rear wall of the cube.

What Does A Body Know?

Ballroom A/B
Tuesday (Opens Video Showcase), 17:30

Bob Pritchard, Sid Fels, Nicolas d'Alessandro, Marguerite Witvoet, Johnty Wang, Cameron Hassall, *University of British Columbia, Canada*
Helene Day-Fraser, *Emily Carr University of Art and Design, Canada*
Meryn Cadell, *University of British Columbia, Canada*

What Does A Body Know? is a concert work for Digital Ventriloquized Actor (DiVA) and sound clips. A DiVA is a real time gesture-controlled formant-based speech synthesizer using a Cyberglove®, touchglove, and Polhemus Tracker® as the main interfaces. When used in conjunction with the performer's own voice solos and "duets" can be performed in real time.

Graffito: Crowd-based Performative Interaction at Festivals

Ballroom Foyer
Wednesday, 17:30 – 19:30

Jennifer Sheridan, *BigDog Interactive Ltd, UK*
Nick Bryan-Kinns, *Queen Mary University of London, UK*
Stuart Reeves, Joe Marshall, *University of Nottingham, UK*
Giles Lane, *Proboscis, UK*

Crowd-based events are generating new forms of crowd-based performative interaction. Nightclubs and festivals are at the cutting edge of crowd-based interaction with ubiquitous computing. The social capital of crowd-based interaction is not well understood and is usually limited to one-off events. Our intention is to explore the possibility for generating a lifelong contextual footprint of crowd-based performative interaction.

■ VIDEOS

The videos track is a forum for human-computer interaction that leaps off the page: vision videos, reflective pieces, humor, novel interfaces, studies and other moving images relevant to HCI. This year's selections will premiere on Tuesday evening with popcorn and drinks, culminating in the Golden Mouse award ceremony. The interactive performance, "What Does a Body Know?" will open the video premier (see page 99).

Accessible Voting: One Machine, One Vote for Everyone

Juan Gilbert, Joshua Ekandem, Shelby Darnell, Hanan Alnizami, Aqueasha Martin, Wanda Johnson, *Clemson University, USA*

The video for Accessible Voting shows a novel technology that allows private and secure voting to people with disabilities who have previously not had the same access to voting equipment as the common voter. Since the inception of elections and election technologies, all segments of the voting population have never been granted equal access, privacy and security when voting. Voting technology today has not addressed the issues that disabled voters are confronted with at the polls. Because approximately 17% of the voting population is disabled, their issues should be handled with a solution geared towards their needs. Disabled voters need to be able to cast their vote without the assistance of others. The Prime III multimodal voting system addresses these issues. The video illustrates the use of the Prime III system and how it allows disabled voters to use the same system as those without disabilities.

BiebBeep: An Interactive Screen for Supporting Public Library 2.0 Information and Social Services

Marije Kanis, Wouter Meys, Mettina Veenstra, *Amsterdam University of Applied Sciences, Netherlands*
Maarten Groen, *Amsterdam University of Applied Sciences, Novay, Netherlands*
Wout Slakhorst, *Novay, Netherlands*

This video presents BiebBeep, an interactive touchscreen system that has been developed with the aim to support information and social services for the New Library in Almere, The Netherlands. The constantly updated information displayed on the interactive screen concerns not only the library itself, but also features happenings in the local area. The system's distinctive feature is that people can add information to the screen themselves, such as tweets, photos, local and cultural news announcements, so that the library and its visitors can inform and connect with each other. Over the course of almost one year, several studies were conducted, including focus group, interview- and observation-based studies that have motivated the functionality, and particularly the user-generated and localized content the system supports. Consequently, the services and functionality the system offers are aimed towards supporting Library 2.0, the next generation library.

Cube-U: Exploring The Combination Of The Internet Of Things And ELearning

Muriel Garreta-Domingo, *Open University of Catalonia, Spain*

Cube-U is an initial prototype that explores the combination of the Internet of Things (IOT) and eLearning. Following a user-centered design process, the powerful possibilities opened by the Internet of Things (IOT) are being included to eLearning in order to enhance the learning experience. IOT is a new field based on the connection of common objects to the internet. So far, it has mainly been applied in industrial environments. Introducing IOT in eLearning will allow for the expansion of the virtual learning experience, currently mostly centered around a computer and paper.

Don't Touch: Social Appropriateness of Touch Sensor Placement on Interactive Lumalive E-Textime Shirts

Sylvia Cheng, Connor Dickie, Andreas Hanewich-Hollatz, Justin Lee, Roel Vertegaal, *Queen's University, Canada*

In this video, we discuss the design of an e-textile shirt with an interactive Lumalive display featuring a touch- controlled image browser. To determine where to place touch sensors, we investigated which areas of the Lumalive shirt users would be comfortable touching or being touched based on how often participants would opt out of touches. For both touchers and touchees, opt-outs occurred mostly in the upper chest. On the front, the upper chest and lower abdominal zones were the least comfortable. Findings suggest participants were less comfortable with touches on the upper chest, the lower abdomen, and the lower back. We conclude that the most appropriate areas for touch sensors on a shirt are on the arms, shoulders, and upper back.

EasyPointer: What You Pointing at is What You Get

Gang Pan, Haoyi Ren, Weidong Hua, Qian Zheng, Shijian Li, *Zhejiang University, China*

This video presents a natural pointing system using gyroscope MEMS, which could achieve what you pointing at is what you get. It enables screen interaction via physical pointing. The system only needs a phone with built-in gyroscope, camera, and wireless communication, e.g. Wi-Fi and Bluetooth, without any other hardware. To achieve sensing of the screen position where user is physically pointing, we also develop easy calibration methods. The prototype system, called EasyPointer, is built upon iPhone 4/iPod 4. It can serve as a laser pointer, a presentation controller, a game controller, and a drawing pen.

Energy House

Greg Walsh, Allison Druin, Elizabeth Foss, Evan Golub, Mona Leigh Guha, Leshell Hatley, Elizabeth Bonsignore, *University of Maryland, USA*

In this video we describe Energy House. Energy House is a game designed with the Cooperative Inquiry Method through the Layered Elaboration technique. Children power items in a virtual house by jumping up and down.

Interactive Snow Sculpture Painting

Jürgen Scheible, *Aalto University, Finland*

This video shows the live-painting of snow sculptures with dabs of digital paint, deploying a mobile phone (virtual spray can) with accelerometer, a PC and a video projector - creating 100% recyclable art. The technology used is called MobiSpray, which has been reported by the author at SIGGRAPH 2009 in the Art papers track. Using a mobile phone in this context allows the painter to roam freely (walk, stand, lie) around the target object, far or near in real physical space, while looking directly at its surface to see how the painting appears in real time. The phone's keyboard keys are used for controlling the drawing tools such as spraying colors or spraying intensity.

Layered Elaboration

Greg Walsh, Allison Druin, Mona Leigh Guha, Elizabeth Foss, Evan Golub, Leshell Hatley, Elizabeth Bonsignore, Sonia Franckel, *University of Maryland, USA*

In this video we describe Layered Elaboration techniques and their use in the cooperative inquiry method.

LifeFlow: Visualizing an Overview of Event Sequences (Video Preview)

Krist Wongsuphasawat, John Alexis Guerra Gómez, Catherine Plaisant, Taowei Wang, *University of Maryland, USA*
Meirav Taieb-Maimon, *Ben-Gurion University of the Negev, Israel*
Ben Shneiderman, *University of Maryland, USA*

Event sequence analysis is an important task in many domains: medical researchers may study the patterns of transfers within the hospital for quality control; transportation experts may study accident response logs to identify best practices. In many cases they deal with thousands of records. While previous research has focused on searching and browsing, overview tasks are often overlooked. We introduce a novel interactive visual overview of event sequences called LifeFlow. LifeFlow is scalable, can summarize all possible sequences, and represents the temporal spacing of the events within sequences. In this video, we show an example of patient transfer data and briefly demonstrate how to analyze them with LifeFlow. See our presentation on Tuesday, from 16:00 - 17:20 in the Visual Analytics session or visit http://www.cs.umd.edu/hcil/lifeflow for more detail.

Microwave Racing

Dominic Furniss, *University College London, UK*

This video engages a broad audience through the theme of Microwave Racing' - a title aimed to intrigue. The film is a fun take on a usability testing scenario where four users/riders have to use a microwave for a simple task, and they race against each other. However, there is a serious point which challenges the audience: if we struggle to design for simple everyday things then what about more serious things like medical devices. We think this could challenge a CHI audience and might sit nicely between videos on the latest entertainment and interaction techniques - for juxtaposition. It is a reminder that there is important work to be done in the healthcare domain and that safety-critical HCI can save lives.

PeR: Designing for Perceptive Qualities

Eva Deckers, Stephan Wensveen, Kees Overbeeke, *Eindhoven University of Technology, Department of Industrial Design, Netherlands*

In this video we show PeR, short for 'Perception Rug'. The design is created as part of our research on how to design for perceptive qualities in objects. This research is conducted around the educational and research theme 'Wearable Senses' and has a theoretical departure in the 'phenomenology of perception' and 'ecological psychology'. The integration of conductive and optic fibers, respectively enable PeR to sense the touch of a person and to let a body of light behave within the surface of the rug. The design can be used as a platform for the exploration of perceptive behavior. Different design characteristics, like the size of the light body, the speed by which the body moves, its shape, focus and direction, can be adjusted in order to design behavior.

Reactive Wall (RWal)

Nivedhitha Giri, Anthony Threatt, Ian Walker, Keith Green, *Clemson University, USA*

This video features a scaled prototype of RWal (Reactive Wall) that was built based upon the floor plan of Hilton San Francisco Union Square Continental Ballroom. The RWal is a continuum surface intelligent system that is commissioned in a conference area. It can sense occupancy in different session areas and change its shape dynamically so that it provides more space for a session that is crowded at the expense of reducing the room space for a session that is sparsely populated. Temperature sensors are used to monitor occupancy and the walls are manipulated by tendons driven by servo motors and controlled by an Arduino ATMega328 microcontroller. The wall is actuated (actively and passively) at different points and is designed in such a way that it encloses a constant volume space. The key idea is to manage the available floor area to prevent congestion. This will be a practical option in any conference where there are typically boring as well as interesting speakers and an unavoidable movement of attendees from one session to another.

SAMM: Driving Asistance System for the Senior Citizen

Víctor González, Roberto Lapuente Romo,
Luis Eduardo Pérez Estrada, *ITAM, Mexico*

Within a frame of possible ubiquitous urban applications this research explores ways to support the mobility of senior citizens in vehicles by finding efficient routes to reach their destination and managing their time. Our solution is called SAMM and operates following a context-aware and crowdsourcing model where data used by the system to optimize routes is both, taken from user's agenda and received from other users in real time. This allows older adults to optimize their trips by doing several things without leaving a main route, and to be aware of traffic jams long before other media report it. It is expected that a ubiquitous urban application like SAMM will be of great benefit for elderly people by increasing trip efficiency and avoiding the problems associated with spending excessive time sitting in a vehicle as well as encouraging them to take an active and independent role in society.

SandCanvas: New Possibilities in Sand Animation

Rubaiat Habib Kazi, Kien Chuan Chua, Shengdong Zhao,
National University of Singapore, Singapore
Richard Davis, *Singapore Management University, Singapore*
Kok-Lim LOW, *National University of Singapore, Singapore*

Sand animation is a performance art technique in which an artist tells stories by creating animated images with sand. Inspired by this medium, we have developed a new multi-touch digital artistic medium named SandCanvas that simplifies the creation of sand animations. The elegance of sand animation lies in the seamless flow of expressive hand gestures that cause images to fluidly evolve, surprising and delighting audiences. While physical sand animation already possesses these properties, SandCanvas enhances them. SandCanvas's color and texture features enable faster, more dramatic transitions, while its mixed media and gesture recording features make it possible to create entirely new experiences. Session recording and frame capture complement these capabilities by simplifying post-production of sand animation performances.

Scenario-Based Persona: Introducing Personas Through Their Main Contexts

Alicia Valls-Saez, Muriel Garreta-Domingo, *Open University of Catalonia, Spain*

The present work introduces a new way of conveying the results of a user analysis study. Personas are a well established user-centered design methodology; however they are not always well-understood or used by non-experts. By explaining our personas based on their main contexts we wanted to 1) reduce the bias that a face can generate by representing silhouettes instead; 2) combine the concepts of personas and scenarios; 3) foster understanding of our users by showing their main contexts (which are becoming more important with the increase of mobile devices); and 4) create a playful and more permanent artefact to hold all this information.

Six-Forty by Four-Eighty: An Interactive Lighting Installation

Jamie Zigelbaum, *Zigelbaum + Coelho, USA*
Marcelo Coelho, *MIT, USA*

Six-Forty by Four-Eighty is an interactive lighting installation composed of an array of magnetic, physical pixels. Individually, pixel-tiles change their color in response to touch and communicate their state to each other by using a person's body as the conduit for information. When grouped together, the pixel-tiles create patterns and animations that can serve as a tool for customizing our physical spaces.

Why Buttons Go Bad

Philipp Hund, Lucy Hughes, Alistair Wood, Jesper Garde,
Tianbo Xu, *University College London, UK*

This video explains in 100 seconds the importance of studying how humans interact with technology. The idea revolves around the evolution of the button and proposes that the design of modern buttons can go wrong when user-centered design is neglected. This was a winning video developed by five MSc students at the UCL Interaction Centre (UCLIC). It was produced as part of a public engagement challenge: to make a digital story that explains what HCI is to young adults. The roles within the video are intentionally caricatured to simplify its message. The video has been used to promote HCI to a wider audience and mark World Usability Day 2010.

CHI 2011 POSTERS

Posters are located throughout the Ballroom Foyer and Registration Foyer. Poster authors are scheduled to stand by their posters during times indicated below. Please visit the posters each day to see all of the exciting work being done and discuss new ideas with poster presenters.

Tuesday (10:00-11:00)
Work-In-Progress (group 1): WIP 100-299 (Ballroom Foyer)
Student Research Competition: SRC 01-11 (Registration Foyer)

Wednesday (10:00-11:00)
Work-In-Progress (group 2): 300-499 (Ballroom Foyer)
Student Design Competition: SDC 01-12 (Registration Foyer)

Thursday (10:00-11:00)
Doctoral Consortium: DC 01-16 (Registration Foyer)
Select Workshops (Registration Foyer)

STUDENT DESIGN COMPETITION

SDC01 | The Design Process of iConnect: Social Advice Application
Shane Wachirawutthichai, Nisha Singh, Ramji Enamuthu, Yun Zhou, *University of Washington, USA*

SDC02 | DiversIT: Inspiring Communication about Individuals' Differences
Timothy Ekl, Tianyi Gao, Sarah Jabon, Joseph Salisbury, Eric Stokes, *Rose-Hulman Institute of Technology, USA*

SDC03 | Interactive Therapy Gloves: Reconnecting Partners After a Stroke
James Hallam, Vanessa Whiteley, Emily Carr, *University of Art and Design, Canada*

SDC04 | ViTu: A System to Help the Mexican People to Preserve and Celebrate their Culture.
Mónica González, Emilio Sánchez, Edgar de los Santos, *Universidad Tecnológica de la Mixteca, Mexico*

SDC05 | Face-back: Who is the Illiterate Again?
Hoda Hamouda, Mariam Hussein, Mohamed Sharaf-El Deen, Nermeen Abdel-Aziz, Shady Hanna, *German University in Cairo, Egypt*

SDC06 | Foodmunity: Designing Community Interactions over Food
Shad Gross, Austin Toombs, Jeff Wain, Kevin Walorski, *Indiana University, USA*

SDC07 | TimeCapsule: Connecting Past
Yikun Liu, Haidan Huang, *Indiana University School of Informatics, USA*

SDC08 | Cowabunga!: A System to Facilitate Multi-Cultural Diversity through CouchSurfing
Sujoy Kumar Chowdhury, Jody Wynn, *Missouri Western State University, USA*

SDC09 | Sharing the Knowledge
Dustin York, *MIT, USA*
Zhengxin Xi, *Art Center College of Design, USA*

SDC10 | SignBright: A Storytelling Application to Connect Deaf Children and Hearing Parents
Chad Harbig, Melissa Burton, Mariam Melkumyan, Lei Zhang, Jiyoung Choi, *Iowa State University, USA*

SDC11 | Entrust: Connecting Low-Income HIV+ Individuals with Health Care Providers
Clifford Gentry, Marisol Martinez Martinez Escobar, Philip Vander Broek, Douglas Choi, Stefan Ganchev, *Iowa State University, USA*

SDC12 | Lingua: Cultural Exchange Through Language Partnerships
Caitlin Holman, Jane Leibrock, Jose Jimenez, Daniel Greitzer, Tom Haynes, *University of Michigan, USA*

STUDENT RESEARCH COMPETITION

SRC01 | Exploring Technological Opportunities for Cognitive Impairment Screening
Hyungsin Kim, *Georgia Institute of Technology, USA*

SRC02 | Send Me Bubbles: Multimodal Performance and Social Acceptability
Julie Williamson, *University of Glasgow, UK*

SRC03 | Frankenstein and Human Error: Device-Oriented Steps are More Problematic than Task-Oriented Ones
Maartje Ament, *University College London, UK*

SRC04 | A Scalable and Tiling Multi-Monitor Aware Window Manager
Joona Laukkanen, *University of Tampere, Finland*

SRC05 | Sharing Stories "In-the-Wild:" A Mobile Storytelling Case Study
Elizabeth Bonsignore, *University of Maryland, USA*

SRC06 | Trusting Experience Oriented Design
Aisling O'Kane, *Mobile Life @ KTH Royal Institute of Technology, Sweden*

SRC07 | Code Gestalt: A Software Visualization Tool for Human Beings
Christopher Kurtz, *RWTH Aachen University, Germany*

SRC08 | Cultural Difference in Image Searching
Wei Dong, *University of Illinois at Urbana Champaign, USA*

SRC09 | How User Reviews Influence Older and Younger Adults' Credibility Judgments of Online Health Information
Vera Liao, *University of Illinois at Urbana Champaign, USA*

SRC10 | Digital Commemoration: Surveying the Social Media Revival of Historical Crises
Sophia Liu, *University of Colorado at Boulder, USA*

SRC11 | The Influence of Grids on Spatial and Content Memory
Svenja Leifert, *University of Konstanz, Germany*

DOCTORAL CONSORTIUM

DC01 | The Songs of Our Past: Working with Listening Histories
Dominikus Baur, *University of Munich (LMU), Germany*

DC02 | Physical Activity with Digital Companions
Lorna Boschman, *Simon Fraser University, Canada*

DC03 | Socialising Presence
Daniel Gooch, *Department of Computer Science, University of Bath, UK*

DC04 | Designing an Interface for Multimodal Narrative Creation
Katy Howland, *University of Sussex, UK*

DC05 | Understanding Multitasking as an Adaptive Strategy Selection Process
Christian Janssen, *University College London, UK*

DC06 | Informing Design of Systems for Intelligence Analysis: Understanding Users, User Tasks, and Tool Usage
Youn-ah Kang, *Georgia Tech, USA*

DC07 | Visual Histories of Decision Processes for Creative Collaboration
Karine Kozlova, *Simon Fraser University, Canada*

DC08 | Designing for Movement Experience
Aaron Levisohn, *Simon Fraser University, Canada*

DC09 | Proxemic Interactions in Ubiquitous Computing Ecologies
Nicolai Marquardt, *University of Calgary, Canada*

DC10 | Modeling Places for Interactive Media and Entertainment Applications
Rui Nóbrega, *Universidade Nova de Lisboa, Portugal*

DC11 | Modeling Users of Intelligent Systems
Stephanie Rosenthal, *Carnegie Mellon University, USA*

DC12 | Pervasive Negabehavior Games for Environmental Sustainability
Joel Ross, *University of California, Irvine, USA*

DC13 | Self-Disclosure in Social Media
Javier Velasco-Martin, *University of North Carolina at Chapel Hill, USA*

DC14 | Distributed Participatory Design
Greg Walsh, *University of Maryland, USA*

DC15 | Using Language-Retrieved Pictures to Support Intercultural Brainstorming
Hao-Chuan Wang, *Cornell University, USA*

DC16 | Technology Design for Pediatric Asthma Management
Tae-Jung Yun, *Georgia Institute of Technology, Samsung Electronics, USA*

WORK IN PROGRESS-GROUP 1

WIP100 | Low Cost vs. High-End Eye Tracking for Usability Testing
Sune Johansen, Javier San Agustin, Henrik Skovsgaard, John Hansen, *IT University of Copenhagen, Denmark*
Martin Tall, *Duke University, USA*

WIP101 | A Crowdsourcing Model for Receiving Design Critique
Anbang Xu, Brian Bailey, *University of Illinois at Urbana-Champaign, USA*

WIP102 | Touch-Bookmark: A Lightweight Navigation and Bookmarking Technique for E-Books
Dongwook Yoon, Yongjun Cho, Kiwon Yeom, Ji-Hyung Park, *Korea Institute of Science and Technology, Republic of Korea*

WIP103 | Understanding Email Communication of Persons with Aphasia
Abdullah Al Mahmud, Jean-Bernard Martens, *Eindhoven University of Technology, Netherlands*

WIP104 | A Context-Sensitive Device to Help People with Autism Cope with Anxiety
Marziya Mohammedali, Dinh Phung, Brett Adams, Svetha Venkatesh, *Curtin University, Australia*

WIP105 | The Effects of Screen-Size and Communication Modality on Psychology of Mobile Device Users
Ki Joon Kim, SungKyunKwan University, *Republic of Korea*
S. Shyam Sundar, *Pennsylvania State University, USA*
Eunil Park, *SungKyunKwan University, Republic of Korea*

WIP106 | On the Use of Pervasive Computing to Support Patients with Obsessive Compulsive Disorder
Vassilis-Javed Khan, *NHTV Breda University of Applied Sciences, Netherlands*
Panos Markopoulos, *Eindhoven University of Technology, Netherlands*
Nynke Spijksma, *Marina de Wolf Hospital, Netherlands*

WIP107 | Living with Pain, Staying in Touch: Exploring the Communication Needs of Older Adults with Chronic Pain
Jessica David, Alison Benjamin, Ronald Baecker, *University of Toronto, Canada*
Diane Gromala, *Simon Fraser University, Canada*
Jeremy Birnholtz, *Cornell University, USA*

WIP108 | Ambient Displays: Influencing Movement Patterns
Tasos Varoudis, *arch+ech Architecture, UK*
Sheep Dalton, Katerina Alexiou, Theodore Zamenopoulos, *Open University, UK*

WIP109 | A Tactile Friend Sense for Keeping Groups Together
Martin Pielot, Benjamin Poppinga, Wilko Heuten, *OFFIS Institute for Information Technology, Germany*
Susanne Boll, *University of Oldenburg, Germany*

WIP110 | Recompose: Direct and Gestural Interaction with an Actuated Surface
Matthew Blackshaw, Anthony DeVincenzi, David Lakatos, Daniel Leithinger, Hiroshi Ishii, *MIT Media Lab, USA*

WIP111 | Make a Trip an Experience: Sharing In-Car Information with Passengers
Ohad Inbar, Noam Tractinsky, *Ben-Gurion University of the Negev, Israel*

WIP112 | Effects of Different Types of Artifacts on Interpretations of Artificial Subtle Expressions (ASEs)
Takanori Komatsu, *Shinshu University, Japan*
Seiji Yamada, *National Institute of Informatics, Japan*
Kazuki Kobayashi, *Shinshu University, Japan*
Kotaro Funakoshi, Mikio Nakano, *Honda Research Institute Japan*

WIP113 | Adaptive Eye-Gaze-Guided Interfaces: Design & Performance Evaluation
Oleg Komogortsev, Corey Holland, Jose Camou, *Texas State University-San Marcos, USA*

WIP114 | RegionalSliding: Enhancing Target Selection on Touchscreen-Based Mobile Devices
Wenchang Xu, Chun Yu, Yuanchun Shi, *Tsinghua University, China*

WIP115 | Why Not Use Mobile Phones? An Observational Study of Medical Work
So Young Lee, Sun Young Park, Yunan Chen, *University of California, Irvine, USA*

WIP116 | Enhancing Outdoor Navigation Systems through Vibrotactile Feedback
Dominik Bial, Dagmar Kern, Florian Alt, *University of Duisburg-Essen, Germany*
Albrecht Schmidt, *University of Stuttgart, Germany*

WIP117 | Us'em: Motivating Stroke Survivors to Use Their Impaired Arm and Hand in Daily Life
Luuk Beursgens, *Eindhoven University of Technology, Netherlands*
Freek Boesten, *University of Maastrich, Netherlands*
Annick Timmermans, Henk Seelen, *Adelante Rehabilitation Centre, Netherlands*
Panos Markopoulos, *Eindhoven University of Technology, Netherlands*

WIP118 | Duet for Solo Piano: MirrorFugue for Single User Playing with Recorded Performances
Xiao Xiao, Hiroshi Ishii, *MIT, USA*

WIP119 | OpenID-Enabled Browser: Towards Usable and Secure Web Single Sign-On
San-Tsai Sun, Eric Pospisil, Ildar Muslukhov, Nuray Dindar, *University of British Columbia, Canada*
Kirstie Hawkey, *Dalhousie University, Canada*
Konstantin Beznosov, *University of British Columbia, Canada*

WIP120 | Children May Expect Drag-and-Drop Instead of Point-and-Click
Wolmet Barendregt, *University of Gothenburg, Sweden*
Mathilde M. Bekker, *Eindhoven University of Technology, Netherlands*

WIP121 | SoloFind: Chains of Interactions with a Mobile Retail Experience System
Alexander Wiethoff, *University of Munich (LMU), Germany*
Gregor Broll, *DOCOMO Euro-Labs, Germany*

WIP122 | Squeeze vs. Tilt: A Comparative Study Using Continuous Tactile Feedback
Eve Hoggan, *University of Helsinki HIIT, Finland*
Dari Trendafilov, Teemu Ahmaniemi, *Nokia, Finland*
Roope Raisamo, *University of Tampere, Finland*

WIP123 | Evaluating an Automatic Rotation Feature in Collaborative Tabletop Workspaces
Gianluca Schiavo, *University of Padova, Italy*
Giulio Jacucci, *University of Helsinki, Finland*
Tommi Ilmonen, *Multitouch Ltd., Finland*
Luciano Gamberini, *University of Padova, Italy*

WIP124 | Participatory Sensing for Community Building
Michael Whitney, Heather Richter Lipford, *University of North Carolina, Charlotte, USA*

WIP125 | Towards User-Centered Mashups: Exploring User Needs for Composite Web Services
Kaisa Väänänen-Vainio-Mattila, Minna Wäljas, *Tampere University of Technology, Finland*

WIP126 | Five Strategies for Supporting Healthy Behavior Change
Yevgeniy Medynskiy, Svetlana Yarosh, Elizabeth Mynatt, *Georgia Institute of Technology, USA*

WIP127 | Interaction and Rendering Techniques for Handheld Phantograms
Finn Ericsson, Alex Olwal, *KTH, Sweden*

WIP128 | Puchi Planet : A Tangible Interface Design for Hospitalized Children
Shinsuke Akabane, Johnson Leu, Hiromi Iwadate, Jae Won Choi, Chin Ching Chang, Saori Nakayama, Madoka Terasaki, Hala Eldemellawy, Masa Inakage, Susumu Furukawa, *Keio University, Japan*

WIP129 | CapWidgets: Tangile Widgets versus Multi-Touch Controls on Mobile Devices
Sven Kratz, *University of Munich, Germany*
Tilo Westermann, *Deutsche Telekom Laboratories, TU Berlin, Germany*
Michael Rohs, *University of Munich, Germany*
Georg Essl, *University of Michigan, USA*

WIP130 | Me Hates This: Exploring Different Levels of User Feedback for (Usability) Bug Reporting
Florian Heller, Leonhard Lichtschlag, Moritz Wittenhagen, Thorsten Karrer, Jan Borchers, *RWTH Aachen University, Germany*

WIP131 | TOK – a Tangible Interface for Storytelling
Cristina Sylla, Pedro Branco, Clara Coutinho, Eduarda Coquet, *University of Minho, Portugal*
David Škaroupka, *Brno University of Technology, Czech Republic*

WIP132 | Collision Avoidance in Virtual Environments through Aural Spacial Awareness
Christian Afonso, Steffi Beckhaus, *University of Hamburg, Germany*

WIP133 | Evaluating the Embodiment Benefits of a Paper-Based TUI for Educational Simulations
Tia Shelley, Leilah Lyons, Moira Zellner, Emily Minor, *University of Illinois at Chicago, USA*

WIP134 | The Life Frame: Responding to the Elderly People's Need of Remembering
Sabina Giorgi, Alessandra Talamo, Barbara Mellini, *Sapienza University of Rome, Italy*

WIP135 | Framework for Measuring Social Affinity for CSCW Software
Michael Oren, Stephen Gilbert, *Iowa State Universtiy, USA*

WIP136 | Move-It: Interactive Sticky Notes Actuated by Shape Memory Alloys
Kathrin Probst, Thomas Seifried, Michael Haller, *Upper Austria University of Applied Sciences, Austria*
Kentaro Yasu, Maki Sugimoto, Masahiko Inami, *Keio University, Japan*

WIP137 | Child-robot Interaction: Playing Alone or Together?
Suleman Shahid, Emiel Krahmer, Marc Swerts, *Tilburg Center for Cognition and Communication, Tilburg University, Netherlands*

WIP138 | Topicality, Time, and Sentiment in Online News Comments
Nicholas Diakopoulos, Mor Naaman, *Rutgers University, USA*

WIP139 | Children's Drawing and Telling of Sustainability in the Home
Audrey Desjardins, Ron Wakkary, *Simon Fraser University, Canada*

WIP140 | MusEEGk: A Brain Computer Musical Interface
Yee Chieh (Denise) Chew, Eric Caspary, *Georgia Institute of Technology, USA*

WIP141 | TableCross: Exuding a Shared Space into Personal Spaces to Encourage Its Voluntary Maintenance
Kazushi Nishimoto, Akari Ikenoue, Koji Shimizu, Tomonori Tajima, Yuta Tanaka, Yutaka Baba, Xihong Wang, *Japan Advanced Institute of Science and Technology, Japan*

WIP142 | Interactivity Sketcher: Crafting and Experiencing Interactivity Qualities
Jong-bum Woo, Da-jung Kim, Suin Kim, Jaesung Jo, Youn-kyung Lim, *KAIST, Republic of Korea*

WIP143 | Predictive Error Behavior Model of On-screen Keyboard Users
Siddharth Jain, Samit Bhattacharya, *IIT Guwahati, India*

WIP144 | Weak Inter-Rater Reliability In Heuristic Evaluation Of Video Games
Gareth White, Pejman Mirza-babaei, Graham McAllister, Judith Good, *The University of Sussex, UK*

WIP145 | guitAR – Supporting Guitar Learning through Mobile Projection
Markus Löchtefeld, Sven Gehring, Ralf Jung, Antonio Krüger, *German Research Center for Artificial Intelligence (DFKI), Germany*

WIP146 | Emotion Faces: the Design and Evaluation of a Game for Preschool Children
Lynne Humphries, Sharon McDonald, *University of Sunderland, UK*

WIP147 | Exploring Trust in Group-to-Group Video-Conferencing
Petr Slovák, Peter Novák, Pavel Troubil, Petr Holub, *Masaryk University, Czech Republic*
Erik Hofer, *University of Michigan, USA*

WIP148 | From Dance to Touch: Movement Qualities for Interaction Design
Sarah Fdili Alaoui, *LIMSI-CNRS and IRCAM-CNRS, France*
Baptiste Caramiaux, *IRCAM-CNRS, France*
Marcos Serrano, *ENSADLab/Drii, France*

WIP149 | The Diversity Donut: Enabling Participant Control Over the Diversity of Recommended Responses
David Wong, Siamak Faridani, Ephrat Bitton, Björn Hartmann, Ken Goldberg, *University of California, Berkeley, USA*

WIP150 | Beyond Pointing and Clicking: How do Newer Interaction Modalities Affect User Engagement?
S. Shyam Sundar, *Penn State University, Sungkyunkwan University, USA*
Qian Xu, *Elon University, USA*
Saraswathi Bellur, Jeeyun Oh, Haiyan Jia, *Penn State University, USA*

WIP151 | BiCEP: Bimanual Color Exploration Plugin
Berto Gonzalez, Celine Latulipe, *University of North Carolina, Charlotte, USA*

WIP152 | MultiPress: Releasing Keys for MultiTap Segmentation
Seunghwan Lee, Jaehyun Han, Geehyuk Lee, *KAIST, Republic of Korea*

WIP153 | Arrange-A-Space: Tabletop Interfaces and Gender Collaboration
Daniel Richert, Ammar Halabi, Anna Eaglin, Matthew Edwards, Shaowen Bardzell, *Indiana University, USA*

WIP154 | Informed Consent and Users' Attitudes to Logging in Large Scale Trials
Alistair Morrison, Owain Brown, Donald McMillan, Matthew Chalmers, *University of Glasgow, UK*

WIP155 | Gathering Text Entry Metrics on Android Devices
Steven Castellucci, I. MacKenzie, *York University, Canada*

WIP156 | Mobile Phones and Information Capture in the Workplace
Amrita Thakur, *Ricoh Innovations, Inc., Stanford University, USA*
Michael Gormish, Berna Erol, *Ricoh Innovations, Inc., USA*

WIP157 | Phone-Based Motion Control in VR - Analysis of Degrees of Freedom
Amal Benzina, Marcus Toennis, Gudrun Klinker, Technische *Universität München, Germany*
Ashry Mohamed, *The German University in Cairo, Egypt*

WIP158 | Crowdsourcing Suggestions to Programming Problems for Dynamic Web Development Languages
Dhawal Mujumdar, *University of California, Berkeley, USA*
Manuel Kallenbach, *RWTH Aachen, Germany*
Brandon Liu, Björn Hartmann, *University of California, Berkeley, USA*

WIP159 | Video Summarization via Crowdsourcing
Shao-Yu Wu, *Academia Sinica, Taiwan*
Ruck Thawonmas, *Ritsumeikan University, Japan*
Kuan-Ta Chen, *Academia Sinica, Taiwan*

WIP160 | "I Don't Like Crumbs on My Keyboard": Eating Behaviors of World of Warcraft Players
Natalie DeWitt, David Lohrmann, *Indiana University, USA*

WIP161 | Investigating Phicon Feedback in Non-Visual Tangible User Interfaces
David McGookin, Stephen Brewster, *University of Glasgow, UK*

WIP162 | VisualWikiCurator: A Corporate Wiki Plugin
Nicholas Kong, Gregorio Convertino, Benjamin Hanrahan, Ed Chi, *PARC, USA*

WIP163 | Descriptive Analysis of Physical Activity Conversations on Twitter
Logan Kendall, Andrea Hartzler, Predrag Klasnja, Wanda Pratt, *University of Washington, USA*

WIP164 | Social Yoga Mats: Reinforcing Synergy Between Physical and Social Activity
Karl Maybach, Arun Nagargoje, Tomas Sokoler, *IT University of Copenhagen, Denmark*

WIP165 | Understanding and Designing Cool Technologies for Teenagers
Janet Read, Daniel Fitton, *University of Central Lancashire, UK*
Benjamin Cowan, Russell Beale, *The University of Birmingham, UK*
Yukang Guo, *Swansea University, UK*
Matthew Horton, *University of Central Lancashire, UK*

WIP166 | Automatically Adapting Web Pages to Heterogeneous Devices
Chinmay Kulkarni, Scott Klemmer, *Stanford University, USA*

WIP167 | Leveraging Trust Relationships in Digital Backchannel Communications
Syavash Nobarany, Mona Haraty, Sidney Fels, *University of British Columbia, Canada*
Brian Fisher, *Simon Fraser University, Canada*

WIP168 | Promoting A Physical Security Mental Model For Personal Firewall Warnings
Fahimeh Raja, *University of British Columbia, Canada*
Kirstie Hawkey, *Dalhousie University, Canada*
Steven Hsu, Kai-Le Wang, Konstantin Beznosov, *University of British Columbia, Canada*

WIP169 | The Role of Commitment Devices and Self-shaping in Persuasive Technology
Neema Moraveji, Ryo Akasaka, Roy Pea, B.J. Fogg, *Stanford University, USA*

WIP170 | Trust-aware Privacy Control for Social Media
Na Li, Maryam Najafian Razavi, Denis Gillet, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

WIP171 | Four Factors of Change – Adaptations of Everyday Design
Ron Wakkary, Leah Maestri, *Simon Fraser University, Canada*

WIP172 | Designing Flexible EMR Systems for Recording and Summarizing Doctor-Patient Interactions
Kyle Larkin, Aisling Kelliher, *Arizona State University, USA*

WIP173 | intangibleCanvas: Free-Air Finger Painting on a Projected Canvas
Jon Moeller, Nic Lupfer, Bill Hamilton, Haiqiao Lin, Andruid Kerne, *Texas A&M University, USA*

WIP174 | Evaluating Software for Communities Using Social Affordances
Ben Hanrahan, Sameer Ahuja, Manuel Perez-Quinones, Andrea Kavanaugh, *Virginia Tech, USA*

WIP175 | Pupillary Response Based Cognitive Workload Index under Luminance and Emotional Changes
Jie Xu, Yang Wang, Fang Chen, Ho Choi, Guanzhong Li, Siyuan Chen, Sazzad Hussain, *National ICT Australia, Australia*

WIP176 | Heuristics for Evaluating IT Security Management Tools
Pooya Jaferian, *University of British Columbia, Canada*
Kirstie Hawkey, *Dalhousie University, Canada*
Andreas Sotirakopoulos, Konstantin Beznosov, *University of British Columbia, Canada*

WIP177 | Who Needs Energy Management? Reducing Energy Consumption in Manufacturing Industries - Early Results of Research into Industrial Energy Management Users
Daniela K. Busse, *SAP Labs, USA*

WIP178 | Supporting Visually Impaired Navigation: A Needs-finding Study
Pablo-Alejandro Quinones, Tammy Greene, Rayoung Yang, Mark Newman, *University of Michigan, USA*

WIP179 | Beyond Drunk Texting: Investigating Recorded Media Sharing at Parties
Gavin Elster, Lawrence Gabriel, Anton Grobman, *University of Washington, USA*

WIP180 | DARLS: Differencing and Merging Diagrams Using Dual View, Animation, Re-Layout, Layers and a Storyboard
Loutfouz Zaman, *York University, Canada*
Ashish Kalra, *NIT Kurukshetra, India*
Wolfgang Stuerzlinger, *York University, Canada*

WIP181 | Audience Visualization Influences Disclosures in Online Social Networks
Kelly Caine, *Indiana University, USA*
Lorraine Kisselburgh, Louise Lareau, *Purdue University, USA*

WIP182 | Shepherding the Crowd: Managing and Providing Feedback to Crowd Workers
Steven Dow, *Stanford University, USA*
Anand Kulkarni, *University of California, Berkeley, USA*
Brie Bunge, Truc Nguyen, Scott Klemmer, *Stanford University, USA*
Björn Hartmann, *University of California, Berkeley, USA*

WIP183 | Postcolonial Language and Culture Theory for HCI4D
Samantha Merritt, Shaowen Bardzell, *Indiana University, USA*

WIP184 | Better Brain Interfacing for the Masses: Progress in Event-Related Potential Detection using Commercial Brain Computer Interfaces
Mick Grierson, Chris Kiefer, *Goldsmiths, University of London, UK*

WIP185 | "Does It Know I'm Not Maintaining Good Posture?": An In-Home Play Study of Wii Fit
Lindsay Reynolds, Steven Ibara, Victoria Schwanda, Dan Cosley, *Cornell University, USA*

WIP186 | The Role of Dynamic Digital Menu Boards in Consumer Decision Making
Anicia Peters, Brian Mennecke, *Iowa State University, USA*

WIP187 | CalmMeNow: Exploratory Research and Design of Stress Mitigating Mobile Interventions
Pablo Paredes, Matthew Chan, *University of California, Berkeley, USA*

WIP188 | Using Gaze Patterns to Study and Predict Reading Struggles due to Distraction
Vidhya Navalpakkam, Justin Rao, Malcolm Slaney, *Yahoo! Research, USA*

WIP189 | Facilitating Photographic Documentation of Accessibility in Street Scenes
Marynel Vázquez, Aaron Steinfeld, *Carnegie Mellon University, USA*

WIP190 | Places in Spaces: Common Ground in Virtual Worlds
N. Sadat Shami, Thomas Erickson, Wendy Kellogg, David Levine, *IBM Research, USA*

WIP191 | Open Source Interface Politics: Identity, Acceptance, Trust, and Lobbying
Roshanak Zilouchian Moghaddam, Michael Twidale, Kora Bongen, *University of Illinois at Urbana Champaign, USA*

WIP192 | Multi-Jump: Jump Roping Over Distances
Lining Yao, Sayamindu Dasgupta, *MIT Media Lab, USA*
Nadia Cheng, *MIT Mechanical Engineering, USA*
Jason Spingarn-Koff, *MIT, USA*
Ostap Rudakevych, *Harvard University GSD, USA*
Hiroshi Ishii, *MIT Media Lab, USA*

WIP193 | Privacy in Domestic Environments
Peter Radics, Denis Gracanin, *Virginia Tech, USA*

WIP194 | Supporting Children's Creativity through Tangible User Interfaces
Allen Bevans, Ying-Ting Hsiao, Alissa Antle, *Simon Fraser University, Canada*

WIP195 | The Role of Modality in Virtual Manipulative Design
Seungoh Paek, Dan Hoffman, Antonios Saravanos, John Black, Charles Kinzer, *Teachers College, Columbia University, USA*

WIP196 | Line Following: A Path to Spatial Thinking Skills
Megen Brittell, *University of Oregon, USA*

WIP197 | IDEAS: An Interface Design Experience for the Autistic Spectrum
Laura Benton, Hilary Johnson, Mark Brosnan, Emma Ashwin, Beate Grawemeyer, *University of Bath, UK*

WIP198 | Enhancing Blog Readability for Non-native English Readers in the Enterprise
Chen-Hsiang Yu, *MIT CSAIL, USA*
Jennifer Thom-Santelli, David Millen, *IBM T.J. Watson Research Center, USA*

WIP199 | Interactive Surface Technology for a Mobile Command Centre
Victor Cheung, Nader Cheaib, Stacey Scott, *University of Waterloo, Canada*

WIP200 | Mobile SoundAR: Your phone on your head
Syed Naseh Hussaini, *Mobile Life @ II, Sweden*

WIP201 | Enhancing Mobile Browsing and Reading
Chen-Hsiang Yu, Robert Miller, *MIT CSAIL, USA*

WORK IN PROGRESS-GROUP 2

WIP300 | Effect of Levels of Automation on Emotional Experience in Intelligent Products
Moon-Hwan Lee, Tek-Jin Nam, Hyeon-Jeong Suk, *KAIST, Republic of Korea*

WIP301 | The Adoption of Online Self-Service Technology (SST) as a Gradual Learning Process
Calin Gurau, *Montpellier Business School, Montpellier, France*

WIP302 | Generalizing Email Messages Digests
Romain Vuillemot, Jean-Marc Petit, Mohand-Said Hacid, *Université de Lyon, CNRS, France*

WIP303 | Who Said Monitoring Is Boring?
Pradeep Buddharaju, Dvijesh Shastri, Anitha Mandapathi, Swati Vaidya, Ioannis Pavlidis, *University of Houston, USA*

WIP304 | Visualizing Meetings as a Graph for More Accessible Meeting Artifacts
Yurdaer Doganata, Mercan Topkara, *IBM Research, USA*

WIP305 | Design Your Room: Adding Virtual Objects to a Real Indoor Scenario
Rui Nóbrega, Nuno Correia, *Universidade Nova de Lisboa, Portugal*

WIP306 | Multi-touch Screens for Navigating 3D Virtual Environments in Participatory Urban Planning
Emma Chow, Amin Hammad, Pierre Gauthier, *Concordia University, Canada*

WIP307 | Flick-and-Brake: Finger Control over Inertial/Sustained Scroll Motion
Mathias Baglioni, *Telecom ParisTech - LTCI-CNRS, Alcatel Lucent Bell Labs, France*
Sylvain Malacria, Eric Lecolinet, Yves Guiard, *Telecom ParisTech-LTCI-CNRS, France*

WIP308 | Towards Context-Sensitive Support of Vitality in Old-Age
Dominik Jednoralski, Michael Schellenbach, *Max Planck Institute, Germany*

WIP309 | Engaging Energy Saving Through Motivation-Specific Social Comparison
Petromil Petkov, *Queensland University of Technology, NICTA, Technische Universität München, Germany*
Felix Köbler, *Technische Universität München, Germany*
Marcus Foth, Richard Medland, *Queensland University of Technology, NICTA, Australia*
Helmut Krcmar, *Technische Universität München, Germany*

WIP310 | ReHandle: Towards Integrating Physical Rehabilitation in Everyday life
Naveen Bagalkot, Tomas Sokoler, *IT University of Copenhagen, Denmark*

WIP311 | An Investigation of Search Behaviour in a Tactile Exploration task for Sighted and Non-sighted Adults.
Luca Brayda, Claudio Campus, Ryad Chellali, *Italian Institute of Technology, Italy*
Guido Rodriguez, *University of Genoa, Italy*
Cristina Martinoli, *Istituto David Chiossone Onlus, Italy*

WIP312 | Information Used and Perceived Usefulness in Evaluating Web Source Code Search Results
Rosalva Gallardo-Valencia, Susan Sim, *University of California, Irvine, USA*

WIP313 | AnalyzeThis: Unobtrusive Mental Health Monitoring by Voice
Keng-hao Chang, Matthew Chan, John Canny, *University of California, Berkeley, USA*

WIP314 | My Mobile Story: Therapeutic Storytelling for Children
Mark Matthews, Gavin Doherty, *Trinity College, Ireland*

WIP315 | MouseHints: Easing Task Switching in Parallel Browsing
Luis Leiva, *Universidad Politécnica de Valencia, Spain*

WIP316 | Initial Results from a Study of the Effects of Meditation on Multitasking Performance
David Levy, Jacob Wobbrock, *University of Washington, USA*
Alfred Kaszniak, *University of Arizona, USA*
Marilyn Ostergren, *University of Washington, USA*

WIP317 | Context Stamp- A Topic-based Content Abstraction for Visual Concordance Analysis
VinhTuan Thai, Siegfried Handschuh, *National University of Ireland, Galway, Ireland*

WIP318 | Sympathetic Guitar: Can a Digitally Augmented Guitar be a Social Entity?
Jay Vidyarthi, Alissa Antle, Bernhard Riecke, *Simon Fraser University, Canada*

WIP319 | A Cultural Knowledge-based Method to Support the Formation of Homophilous Online Communities
Junia Anacleto, Fernando Balbino, Andre Bueno, *Federal University of São Carlos, Brazil*
Sidney Fels, *University of British Columbia, Canada*
Gilberto Astolfi, *Federal University of São Carlos, Brazil*

WIP320 | Turkomatic: Automatic Recursive Task and Workflow Design for Mechanical Turk
Anand Kulkarni, Matthew Can, Björn Hartmann, *University of California, Berkeley, USA*

WIP321 | A collective Map to Capture Human Behavior for the Design of Public Spaces
Mizuki Oka, *The University of Tokyo, Japan*
Tom Hope, *Tokyo Institute of Technology, Japan*
Yasuhiro Hashimoto, *The University of Tokyo, Japan*
Ryoko Uno, *Tokyo University of Agriculture and Technology, Japan*
Myeong-Hee Lee, *Design Office matt, Japan*

WIP322 | SketchSpace: Designing Interactive Behaviors with Passive Materials
David Holman, *Queen's University, Canada*
Hrvoje Benko, *Microsoft Research, USA*

WIP323 | Aiding Usability Evaluation via Detection of Excessive Visual Search
Oleg Komogortsev, Corey Holland, Dan Tamir, Carl Mueller, *Texas State University-San Marcos, USA*

WIP324 | ConsiderIt: Improving Structured Public Deliberation
Travis Kriplean, Jonathan Morgan, Deen Freelon, Alan Borning, Lance Bennett, *University of Washington, USA*

WIP325 | VORTEX: Design and Implementation of an Interactive Volumetric Display
Abhijit Karnik, Archie Henderson, Andrew Dean, Howard Pang, Thomas Campbell, *University of Bristol, UK*
Satoshi Sakurai, *Osaka University, Japan*
Guido Herrmann, *University of Bristol, UK*
Shahram Izadi, *Microsoft Research, UK*
Yoshifumi Kitamura, *Tohoku University, Japan*
Sriram Subramanian, *University of Bristol, UK*

WIP326 | Input Observer: Measuring Text Entry and Pointing Performance from Naturalistic Everyday Computer Use
Abigail Evans, Jacob Wobbrock, *University of Washington, USA*

WIP327 | Effect of MobileASL on Communication Among Deaf Users
Joy Kim, Jessica Tran, Tressa Johnson, Richard Ladner, Eve Riskin, Jacob Wobbrock, *University of Washington, USA*

WIP328 | ScaleMirror: A Pervasive Device to Aid Weight Analysis
Andrew Younge, Vinod Periasamy, Mohammed Al-Azdee, William Hazlewood, Kay Connelly, *Indiana University, USA*

WIP329 | Tangible and Body-Based Interaction with Auditory Maps
Andrew Milne, Alissa Antle, Bernhard Riecke, *Simon Fraser University, Canada*

WIP330 | Blink: Observing Thin Slices of Behavior to Determine Users' Expectation Towards Task Difficulty
Nuno Branco, *School of Technology and Management of Felgueiras, Portugal*
João Pedro Ferreira, Marta Noronha e Sousa, Pedro Branco, Nuno Otero, Nelson Zagalo, Manuel João Ferreira, *University of Minho, Portugal*

WIP331 | Mourning Tree : Space Interaction Design for the Commemoration Ceremony
Jihwan Kim, Seyong Kim, Jinju Yu, Sangsup Yoon, Sangki Han, *KAIST, Republic of Korea*

WIP332 | Technology-Mediated Parent-Child Intimacy: Designing for Ecuadorian Families Separated by Migration
Marisol Wong-Villacres, Shaowen Bardzell, *Indiana University, USA*

WIP333 | Listening to the Community: Social Media Monitoring Tasks for Improving Government Services
Cecile Paris, Stephen Wan, *CSIRO, Australia*

WIP334 | Sex Toys and Designing for Sexual Wellness
Anna Eaglin, Shaowen Bardzell, *Indiana University, USA*

WIP335 | WATER Alert! Disseminating Drinking Water Quality Information to South Africans
Deana Brown, *Georgia Institute of Technology, USA*
Gary Marsden, *University of Cape Town, South Africa*
Melissa Loudon, *University of Southern California, USA*

WIP336 | Gathering Requirements for a Personal Health Management System
James Milewski, Hector Parra, *University of California, Irvine, USA*

WIP337 | Designing A Personal Visualization Projection of Online Social Identity
Mandy Leung, Martin Tomitsch, *The University of Sydney, Australia*
Andrew Vande Moere, *Katholieke Universiteit, Leuven, Belgium*

WIP338 | Active Progress Bars: Facilitating the Switch to Temporary Activities
Christophe Hurter, *Civil Aviation Research Center, IRIT Toulouse University, France*
Audrey Girouard, *Queen's University, Canada*
Nathalie Riche, *Microsoft Research, USA*
Catherine Plaisant, *University of Maryland, USA*

WIP339 | LoOkie - It Feels Like Being There
Talya Porat, *Deutsche Telekom Laboratories at Ben Gurion University, Israel*
Inbal Rief, *kitchen97.com, Israel*
Rami Puzis, Yuval Elovici, *Deutsche Telekom Laboratories at Ben Gurion University, Israel*

WIP340 | PLink: Paper-Based Links for Cross-Media Information Spaces
Jürgen Steimle, *Technische Universität Darmstadt, Germany*
Nadir Weibel, *University of California, San Diego, USA*
Simon Olberding, Max Mühlhäuser, *Technische Universität Darmstadt, Germany*
James Hollan, *University of California, San Diego, USA*

WIP341 | Introducing VERO: Visual Experiential Requirements Organizer
Agnieszka Szostek, *Interactive Technologies Laboratory Institute for Information Processing (OPI), Poland*
Evangelos Karapanos, *Madeira Interactive Technologies Institute, Universidade da Madeira, Portugal*

WIP342 | The Online Privacy Paradox: A Social Representations Perspective
Marie Caroline Oetzel, Tijana Gonja, *Institute for Management Information Systems, Vienna University of Economics and Business, Austria*

WIP343 | From the Lab to the World: Lessons from Extending a Pointing Technique for Real-World Use
Alex Jansen, Leah Findlater, Jacob Wobbrock, *University of Washington, USA*

WIP344 | Customization for Games: Lessons from Variants of Texas Hold'em
Gifford Cheung, *University of Washington, USA*

WIP345 | 'Canary in a Coal Mine': Monitoring Air Quality and Detecting Environmental Incidents by Harvesting Twitter
Henricus Smid, Patrick Mast, Maarten Tromp, Andi Winterboer, Vanessa Evers, *University of Amsterdam, Netherlands*

WIP346 | Transparency in Mobile Navigation
David McGookin, Inti Herteleer, Stephen Brewster, *University of Glasgow, UK*

WIP347 | Investigating Syntactic Alignment in Spoken Natural Language Human-Computer Communication
Benjamin Cowan, Russell Beale, *The University of Birmingham, UK*
Holly Branigan, *The University of Edinburgh, UK*

WIP348 | Informing Design by Recording Tangible Interaction
Augusto Esteves, *Madeira Interactive Technologies Institute, Portugal*
Ian Oakley, *Madeira Interactive Technologies Institute, University of Madeira, Portugal*

WIP349 | Robotic Wheelchair Moving with Caregiver Collaboratively Depending on Circumstances
Yoshinori Kobayashi, Yuki Kinpara, Erii Takano, Yoshinori Kuno, Keiichi Yamazaki, *Saitama University, Japan*
Akiko Yamazaki, *Tokyo University of Technology, Japan*

WIP350 | Force Gestures: Augmented Touch Screen Gestures Using Normal and Tangential Force
Seongkook Heo, Geehyuk Lee, *KAIST, Republic of Korea*

WIP351 | Comparative Evaluation of Recommender System Quality
Paolo Cremonesi, Franca Garzotto, Sara Negro, Alessandro Papadopoulos, *Politecnico di Milano, Italy*
Roberto Turrin, *Moviri SRL, Italy*

WIP352 | My Own-Style Interaction: Exploring Individuals' Preferences to Interactivity
Da-jung Kim, Youn-kyung Lim, Hyeon-Jeong Suk, *KAIST, Republic of Korea*

WIP353 | Mixing Psychology and HCI in Evaluation of Augmented Reality Mental Health Technology
Maja Wrzesien, *Universidad Politécnica de Valencia, Spain*
Jean-Marie Burkhardt, *Université Paris Descartes, France*
Mariano Alcañiz Raya, *Universidad Politécnica, Spain*
Cristina Botella, *Universidad Jaume I, Spain*

WIP354 | Adding Haptic Feedback to Mobile TV
Jason Alexander, Mark Marshall, Sriram Subramanian, *University of Bristol, UK*

WIP355 | How Revealing are Eye-Movements for Understanding Web Engagement in Young Children?
Stacey Birkett, Adam Galpin, Simon Cassidy, Lynne Marrow, Sarah Norgate, *University of Salford, UK*

WIP356 | PowerSocket: Towards On-Outlet Power Consumption Visualization
Florian Heller, Jan Borchers, *RWTH Aachen University, Germany*

WIP357 | CrowdForge: Crowdsourcing Complex Work
Aniket Kittur, Boris Smus, Robert Kraut, *Carnegie Mellon University, USA*

WIP358 | Data Type Based Security Alert Dialogs
Max-Emanuel Maurer, Alexander De Luca, Heinrich Hussmann, *University of Munich, Germany*

WIP359 | Paper Interface Design for Classroom Orchestration
Sébastien Cuendet, Quentin Bonnard, Frédéric Kaplan, Pierre Dillenbourg, *EPFL, Switzerland*

WIP360 | STORIFY- A Tool to Assist Design Teams in Envisioning and Discussing User Experience
Berke Atasoy, Jean-Bernard Martens, *Eindhoven University of Technology, Netherlands*

WIP361 | CheMO: Mixed Object Instruments and Interactions for Tangible Chemistry Experiments
Kyohyun Song, Gunhee Kim, Inkyu Han, Jeongyoung Lee, Ji-Hyung Park, Sungdo Ha, *KAIST, Republic of Korea*

WIP362 | A Fitt of Distraction: Measuring the Impact of Distracters and Multi-users on Pointing Efficiency
Denis Lalanne, Agnes Lisowska Masson, *University of Fribourg, Switzerland*

WIP363 | A Long-term Study of User Experience towards Interaction Designs that Support Behavior Change
Sang-Su Lee, Youn-kyung Lim, Kun-pyo Lee, *KAIST, Republic of Korea*

WIP364 | Digital Mind Mapping: Innovations for Real-time Collaborative Thinking
Honray Lin, Haakon Faste, *Carnegie Mellon University, USA*

WIP365 | What Do You See When You Interact with Friends Online? Face, Hand, or Canvas?
Kyle Koh, Hyunjoo Song, Daekyoung Jung, Bohyoung Kim, Jinwook Seo, *Seoul National University, Republic of Korea*

WIP366 | Dual-Space Drawing: Designing an Interface to Support Creative and Reflective Drawing Experiences
Jee Yeon Hwang, Henry Holtzman, Mitchel Resnick, *MIT Media Lab, USA*

WIP367 | Tag Clouds and Keyword Clouds: Evaluating Zero-Interaction Benefits
Mathew Wilson, Max Wilson, *Swansea University, UK*

WIP368 | Causal Temporal Order in HCI
Adam Darlow, Gideon Goldin, *Brown University, USA*

WIP369 | Constructing Virtual 3D Models with Physical Building Blocks
Ricardo Jota, *Inesc-ID, Portugal*
Hrvoje Benko, *Microsoft Research, USA*

WIP370 | Communication by Change in Taste
Hiromi Nakamura, Homei Miyashita, *Meiji University, Japan*

WIP371 | Text Highlighting Improves User Experience for Reading with Magnified Displays
Tersia Gowases, Roman Bednarik, Markku Tukiainen, *University of Eastern Finland, Finland*

WIP372 | Medical Record Privacy: Is it a Facade?
Aubrey Baker, Laurian Vega, Tom DeHart, Steve Harrison, *Virginia Tech, USA*

WIP373 | Wriggle: An Exploration of Emotional and Social Effects of Movement
Katherine Isbister, Ulf Schwekendiek, *NYU-Poly, USA*
Jonathan Frye, *NYU, USA*

WIP374 | Towards a Psychographic User Model From Mobile Phone Usage
Rodrigo de Oliveira, Alexandros Karatzoglou, Pedro Concejero Cerezo, Ana Armenta Lopez de Vicuña, Nuria Oliver, *Telefonica Research, Spain*

WIP375 | The Effects of Spatial Layout and View Control on Cognitive Processing
Eric Ragan, Alex Endert, Doug Bowman, Francis Quek, *Virginia Tech, USA*

WIP376 | Bridging the Gap: Implementing Interaction Through Multi-User Design
Tom Bartindale, Rachel Clarke, John Shearer, Madeline Balaam, Peter Wright, Patrick Olivier, *Newcastle University, UK*

WIP377 | TweetSpiration: Leveraging Social Media for Design Inspiration
Scarlett Herring, Christina Poon, Geoffrey Balasi, Brian Bailey, *University of Illinois at Urbana Champaign, USA*

WIP378 | Interpersonal Informatics: Making Social Influence Visible
Elizabeth Bales, William Griswold, *University of California, San Diego, USA*

WIP379 | Socially-Interactive Dressing Room: An Iterative Evaluation on Interface Design
Jasy Suet Yan Liew, Elizabeth Kaziunas, JianZhao Liu, Shen Zhuo, *Syracuse University, USA*

WIP380 | Behavioral Science-Informed Technology Interventions for Change in Residential Energy Consumption
Matthew Crowley, Aurélia Heitz, Annika Matta, Kevin Mori, Banny Banerjee, *Stanford University, USA*

WIP381 | Mobile Augmented Reality: Video Prototyping
Marco de Sá, Judd Antin, David Shamma, Elizabeth Churchill, *Yahoo! Research, USA*

WIP382 | CAESSA: Visual Authoring of Context-Aware Experience Sampling Studies
Mirko Fetter, *University of Bamberg, Germany*
Maximilian Schirmer, *Bauhaus-University Weimar, Germany*
Tom Gross, *University of Bamberg, Germany*

WIP383 | Next Step in Electronic Brainstorming: Collaborative Creativity with the Web
Lassi Liikkanen, *Stanford University, USA, USA*
Kai Kuikkaniemi, Petri Lievonen, Pauli Ojala, *Helsinki Institute for Information Technology, Finland*

WIP384 | Multimodal Video Annotation for Contemporary Dance Creation
Diogo Cabral, Urândia Carvalho, João Silva, João Valente, Carla Fernandes, Nuno Correia, *Universidade Nova de Lisboa, Portugal*

WIP385 | Retirees on Facebook: Can Online Social Networking Enhance Their Health and Wellness?
S. Shyam Sundar, *The Pennsylvania State University, Sungkyunkwan University, USA*
Anne Oeldorf-Hirsch, Jon Nussbaum, Richard Behr, *The Pennsylvania State University, USA*

WIP386 | Programming on the Move: Design Lessons from IPRO
Matthew Berland, *University of Texas at San Antonio, USA*
Taylor Martin, Tom Benton, Carmen Petrick, *University of Texas at Austin, USA*

WIP387 | PMRI: Development of a Pictorial Mood Reporting Instrument
Martijn Vastenburg, Natalia Romero Herrera, *Delft University of Technology, Netherlands*
Daniel Van Bel, *Eindhoven University of Technology, Netherlands*
Pieter Desmet, *Delft University of Technology, Netherlands*

WIP388 | Integrating Touch and Near Touch Interactions for Information Visualizations
Aras Balali Moghaddam, Jeremy Svendsen, Melanie Tory, Alexandra Branzan Albu, *University of Victoria, Canada*

WIP389 | Evaluating a Social Media Application for Sustainability in the Workplace
David Lehrer, Janani Vasudev, *University of California, Berkeley, USA*

WIP390 | ViewSer: A Tool for Large-Scale Remote Studies of Web Search Result Examination
Dmitry Lagun, Eugene Agichtein, *Emory University, USA*

WIP391 | Constructing Scientific Arguments with User Collected Data in Nomadic Inquiry
Alex Kuhn, Brenna McNally, Clara Cahill, Chris Quintana, Elliot Soloway, *University of Michigan, USA*

WIP392 | SoundVision: Graphic Communication Method for Blind Users
Chaochao Chen, *Kunsthochschule Berlin-Weissensee, Germany*

WIP393 | Evoked Friction on a Smooth Touch Device
Johan Kildal, *Nokia Research Center, Finland*

WIP394 | Supporting Greater Access to Pre- and Post-natal Information and Services for Women in Rural Kenya
Jakita Thomas, *Spelman College, USA*
Yolanda Rankin, *IBM Research - Almaden, USA*
Matthew Tuta, *University of Nairobi, Kenya*
Eric Mibuari, *Stanford University, USA*

WIP395 | WaveForm: Remote Video Blending for VJs Using In-Air Multitouch Gestures
Amartya Banerjee, Jesse Burstyn, Audrey Girouard, Roel Vertegaal, *Queen's University, Canada*

WIP396 | What Would the Parents Like to Know About Children but are Afraid to Ask?: Designing Reports about Child Development in Online Games
Karolina Chmiel, Agnieszka Matysiak Szostek, *Institute for Information Processing, Poland*

WIP397 | The Effects of Walking and Control Method on Pressure-Based Interaction
Graham Wilson, Stephen Brewster, Martin Halvey, *University of Glasgow, UK*

WIP398 | Power Ballads: Deploying Aversive Energy Feedback in Social Media
Derek Foster, Conor Linehan, Shaun Lawson, Ben Kirman, *University of Lincoln, UK*

WIP399 | Can Users Remember Their Pictorial Passwords Six Years Later?
Thomas Tullis, Donna Tedesco, Kate McCaffrey, *Fidelity Investments, USA*

WIP400 | Senior Wellness: Practices of Community Senior Centers
Young Seok Lee, Santosh Basapur, Shirley Chaysinh, Crysta Metcalf, *Motorola Mobility Research, USA*

WIP401 | NICU-2-HOME: Supporting the Transition to Home from the Neonatal Intensive Care Unit using a Mobile Application
Young Seok Lee, *Motorola Mobility Research, USA*
Craig Garfield, *NorthShore University HealthSystem, USA*
Noel Massey, *Motorola Solutions Inc., USA*
Shirley Chaysinh, Sana Hassan, *Motorola Mobility Research, USA*

EXHIBITS

ATR Intelligent Robotics and Communication Laboratories – Booth 23

Telenoid and Elfoid are tele-operated androids whose novel design (humanlike, but not similar to anyone) enables us to transmit human presence. You can talk to a remote person while feeling as if you are facing each other with this new media.

Bloomberg L. P. (Champion Sponsor) – Booth 31 & 32

Bloomberg is the leading global provider of data, news and analytics. The BLOOMBERG TERMINAL and Bloomberg's media services provide real-time and archived financial and market data, pricing, trading, news and communications tools in a single, integrated package to corporations, news organizations, financial and legal professionals and individuals around the world.

Bungie – Booth 9A

Bungie spent the last decade creating Halo, an award-winning global entertainment phenomenon. Now, as we embark on a new journey, we're looking for passionate designers and user researchers to join our quest to make great games, and to achieve our ultimate goal of total world domination.

Calm Interactive – Booth 14

Calm Interactive is a 3D depth motion recognition solution developer and provider based on a PC. In fall 2011, we launch new products such as Kidscore (Education Solution), etc. Please come by our booth to experience our new demo version.

eBay (Champion Sponsor) – Booth 33 & 34

eBay needs you. We need your eye for design and your passion for customer-centric user experiences to create the next generation of e-commerce. Meet and mingle with us and see why we're one of Fast Company's "50 Most Innovative Companies."

Facebook – Booth 5A

Facebook gives people the power to share and make the world more open and connected. We're also hiring great designers, UEX and UIEs to help design Facebook and the next set of social experiences across the web. Find us at our booth to learn more.

Eye Tech Digital Systems – Booth 5

EyeTech's Vision Tracker tracks a user's gaze up to 7 feet away for both TV and PC research. Powerful research software provides easy data collection of eye metrics (pupil size, gaze position, time stamp, etc.) for multi-users. A free API also helps developers design their own custom solutions.

Google (Champion Sponsor) – Booth 27 & 28

Google's mission is to organize the world's information, making it universally accessible and useful. Every day, we bring our spirit of innovation and entrepreneurship to work. Come by our booth, meet our engineers and researchers, demo some new products and learn about some of the great opportunities we have at Google.

HAMK University of Applied Sciences – Booth 9

Get a Life is a future-oriented career guidance system aimed for Finnish university students. The demo version of the career and life simulator (only in Finnish, English version still under work) can be found at http://getalife.hamk.fi/.

Human Factors International – Booth 7

HFI can help you develop a world-class UX program. From usability to persuasive design to integrating UX into your design process, HFI offers a complete suite of UX consulting, training, certification, and products. http://www.humanfactors.com

John Wiley & Sons – Booth 29

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 new, third edition of our global bestseller, *Interaction Design*, by Rogers, Preece and Sharp.

LC Technologies, Inc. – Booth 17

LC Technologies offers a range of eye tracking systems from The EyeFollower 2 that provides automatic eye acquisition, binocular tracking, and 0.45-degree gazepoint tracking accuracy throughout 20x12x15 inch volume to the Eyegaze Edgeä Pack, an inexpensive plug-and-play system. All systems are available with optional state-of-the art NYAN analysis software.

Microsoft (Champion Sponsor) Booth 1, 2 & 3

At Microsoft, our customers inspire and motivate us every day by creating business solutions, developing breakthrough ideas, and having fun with our software and tools. Come by our booth to experience our demos and learn about new technologies. We'd also like the chance to meet like-minded UX enthusiasts, so do stop by and tell us about yourself.

Mind Media BV – Booth 21 & 22

Mind Media (founded 1992) is a major player in the field of physiological Computing & Feedback solutions for Brain-Body technology. In spring 2011 we launch the new wireless NeXus-10 Mark II, the ultimate multi-sensor Swiss Army knife of physiology.

MIT Press – Booth 15

The MIT Press publishes extensively in the area of Human-Computer Interaction and its' related fields. Please come by our booth to browse our newest and classic titles and receive a 30% discount.

Morgan & Claypool Publishers – Booth 20

Morgan & Claypool is publisher of the Synthesis digital library, including the HCI series edited by Jack Carroll.

Morgan Kaufmann – Booth 16

Morgan Kaufmann is a leading publisher in User Experience and Human-Computer Interaction books for both researchers and practitioners. Visit mkp.com/hci for the complete Morgan Kaufmann UX/HCI catalog, and make sure to check out the NEW Sketching User Experiences: The Workbook coming soon!

now publishers – Booth 24

Publishers of the highly acclaimed FOUNDATIONS AND TRENDS journals. Peer-reviewed, cutting edge surveys, reviews and tutorials in human computer interaction. Visit our booth to browse the online library. All print titles available for the special CHI price of $35.

Oracle – Booth 12

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.

Poken – Lobby

Poken is your "Social Business Card." It's the easy way to share your contact details and online social networks in the real world. Just hold two Poken palms together – High 4! – and you're connected. To activate your poken, pull apart the body and hand and pull the plastic tab.

Samsung Electronics Co. LTD – Booth 4

The UX Center of Samsung Electronics presents its recent research results related to user experience and new interaction developments.

SAP (Champion Sponsor) – Booth 30

As market leader in enterprise application software, SAP helps companies of all sizes and industries run better. We have more than 109,000 customers in over 120 countries and employ 53,000 people at locations in more than 50 countries. Come by our booth and meet our user experience professionals..

Seeing Machines – Booth 13

Seeing Machines is an award winning Technology Company focused on designing vision-based human machine interfaces. Our forerunner product called faceLAB™ provides head, eye, eyelid and gaze tracking. For more information visit http://www.seeingmachines.com.

SMI Eye & Gaze Tracking – Booth 25

SMI is a leading provider of eye and gaze tracking systems to a global market. Our advanced analysis software provides visualizations that simplify the interpretation of eye tracking data. Let us show you how to add an eye tracker to your existing set of tools: http://www.smivision.com/egts.

Springer – Booth 18

Take your research and skills to the next level and discover an authoritative range of journals, books, and major reference works and stop by the Springer booth and learn more about our multi-format publishing model: print + eBook + MyCopy.

TANG User Experience Consulting – Booth 19

TANG User eXperience Consulting is a leading experience strategy, design, research and training firm in China. TANG has served over 80 local and international clients, many of which are world top 500 enterprises. TANG offers the best choice of user experience services in China.

Taylor & Francis – Booth 8

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.

Tobii Technology – Booth 10 & 11

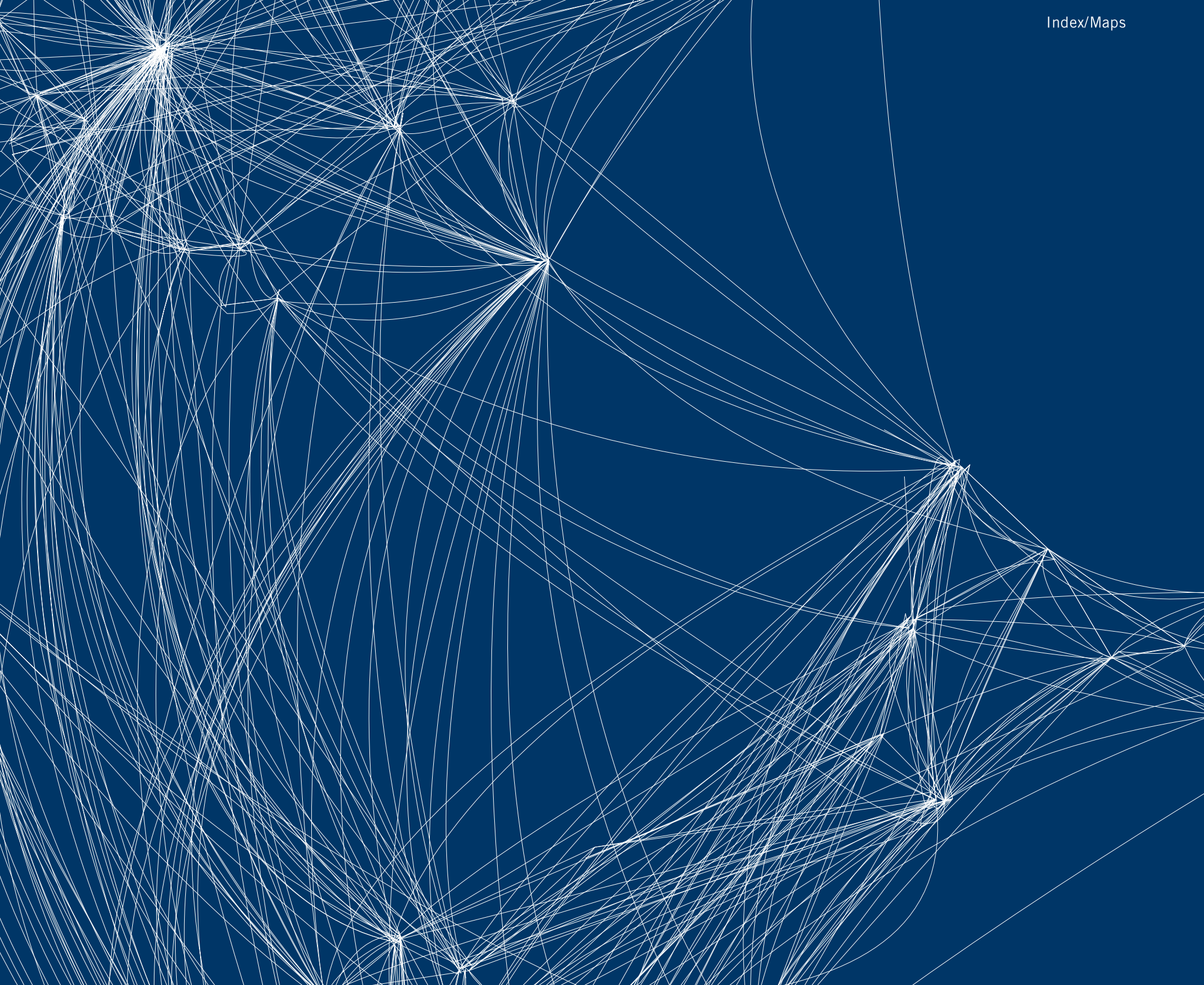
Tobii Technology is the world leader in eye tracking for usability and market research applications. Tobii allows you to know where participants are looking in real-time and aggregate the data of multiple participants. Don't guess or count on participants to tell you what they think - know it with Tobii eye tracking!

TU Graz (Graz University of Technology) – Booth 6

HYDROSYS is a research project that provides an innovative software system infrastructure to support teams of users in on-site monitoring and management events, analyzing processes that may cause environmental degradation. The project shows latest advancements in outdoor Augmented Reality, mobile technology and interaction research!

UserZoom, Inc – Booth 26

UserZoom is the leading online research software company specializing in User Experience & Usability through on-demand solutions. We help brands optimize online UX by managing and conducting cost-effective research projects, such as online usability testing, card-sorting and surveys.



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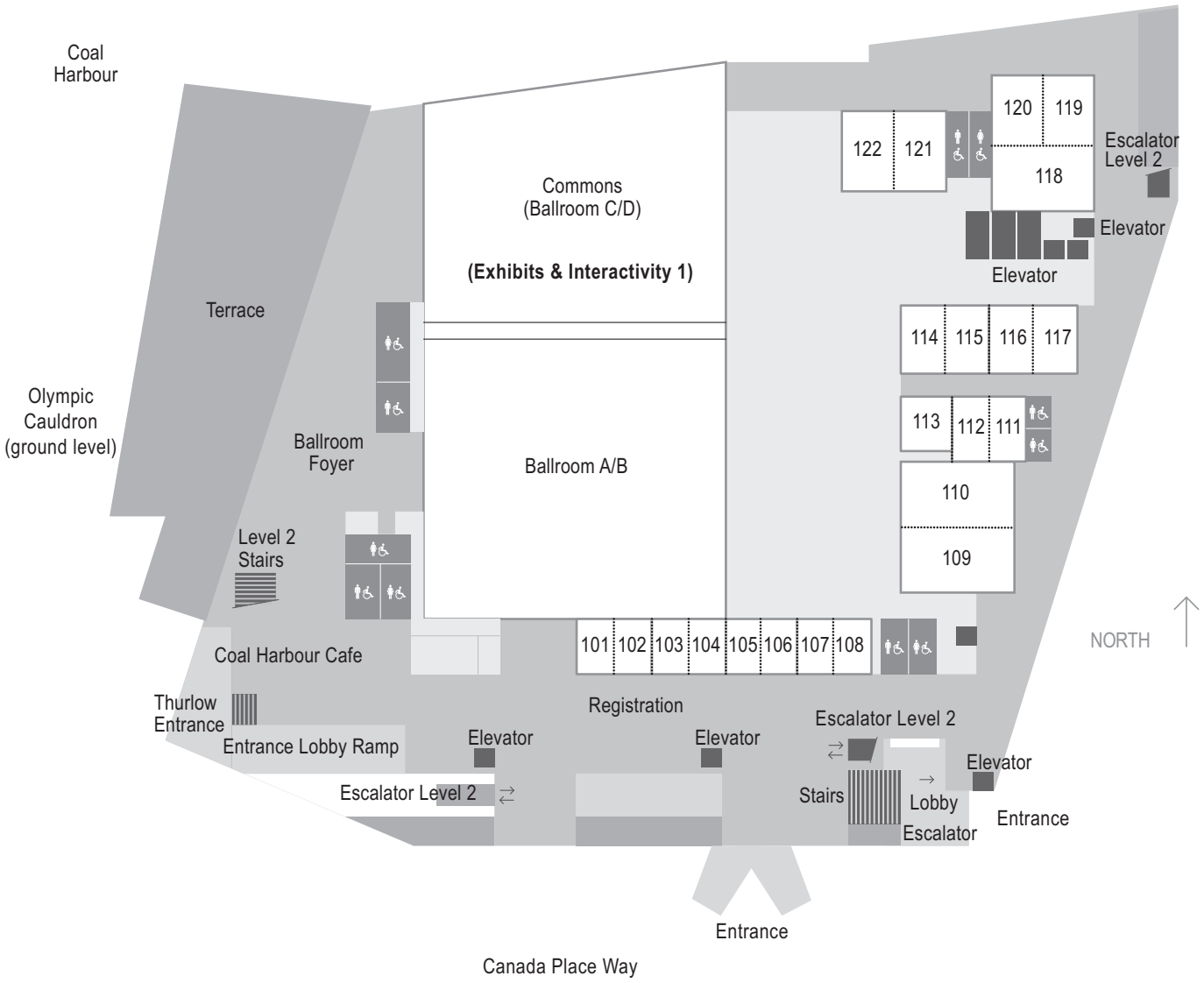

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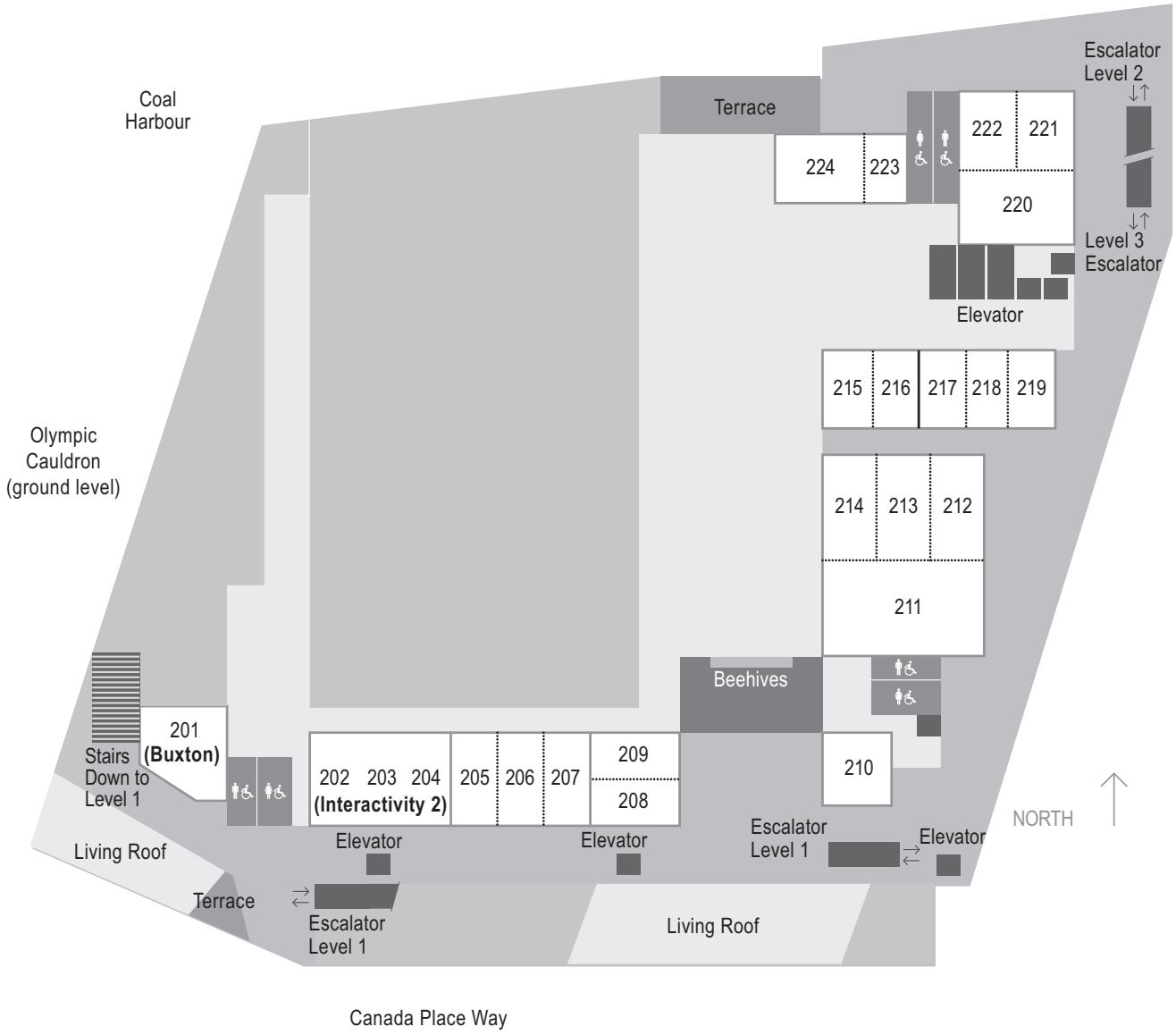

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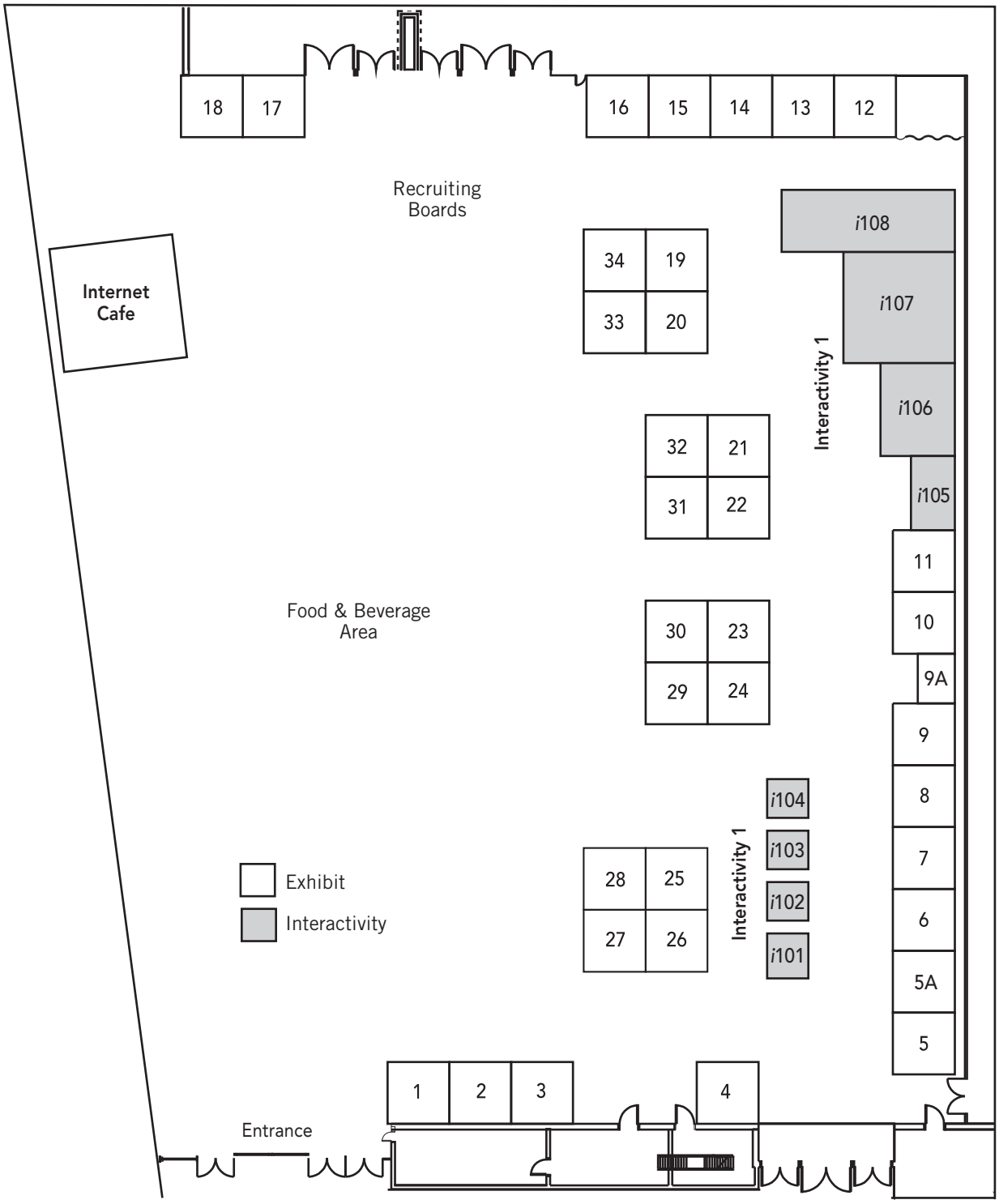

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i101 Ubiquitous Voice Synthesis: Interactive Manipulation of Speech and Singing on Mobile Distributed Platforms

i102 Snaplet: Using Body Shape to Inform Function in Mobile Flexible Display Devices

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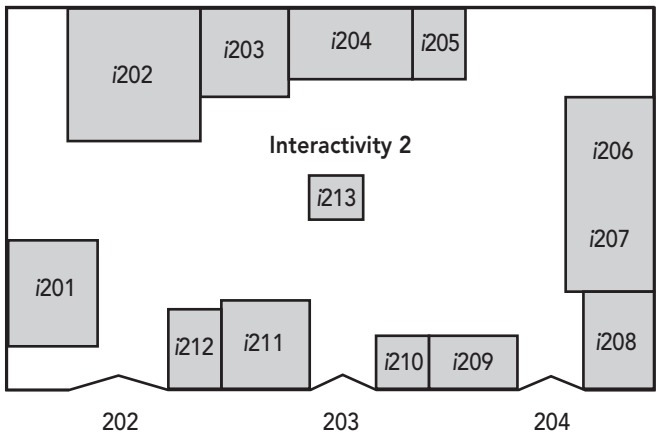

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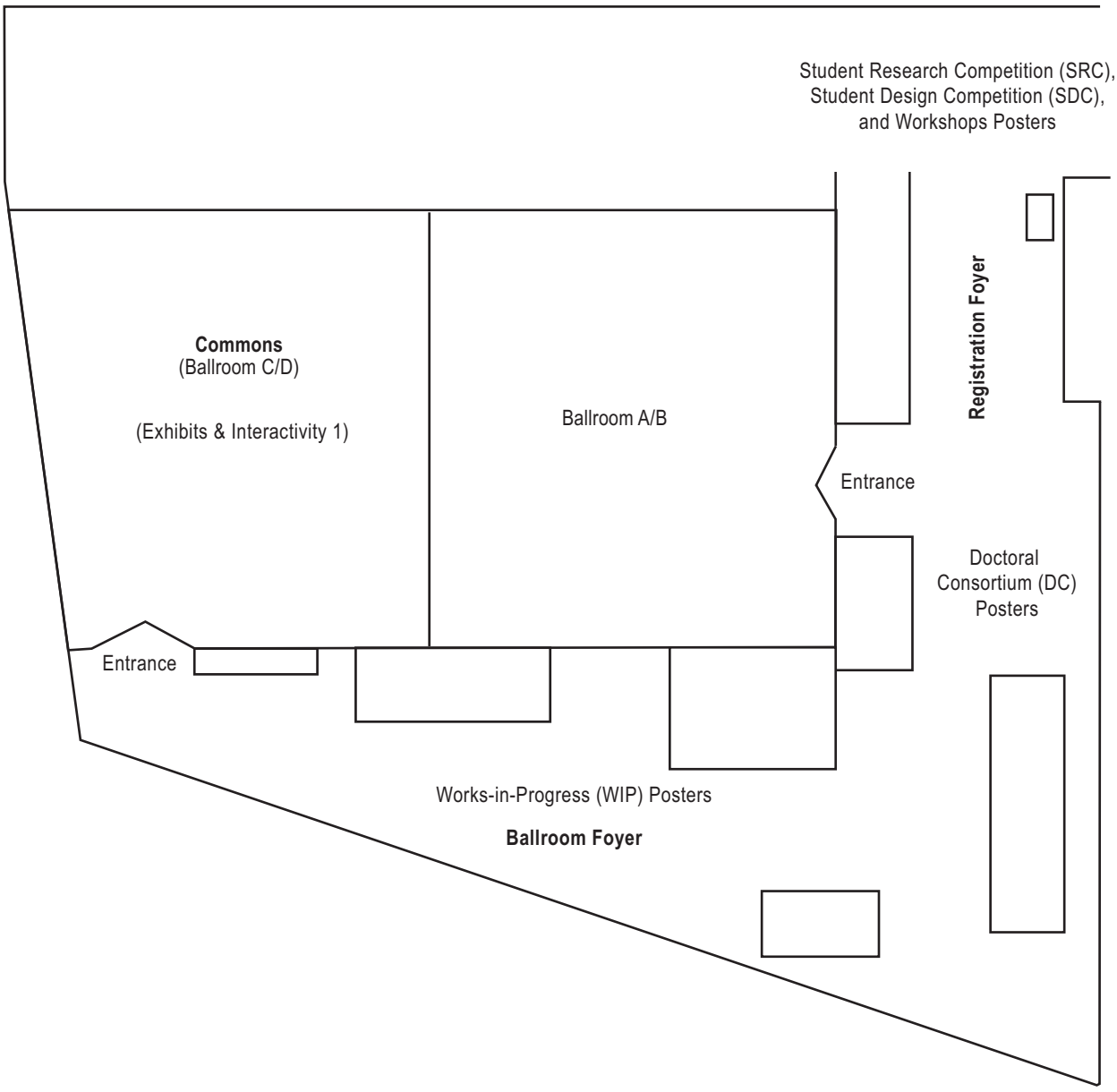
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