CHI 2010
we are HCI

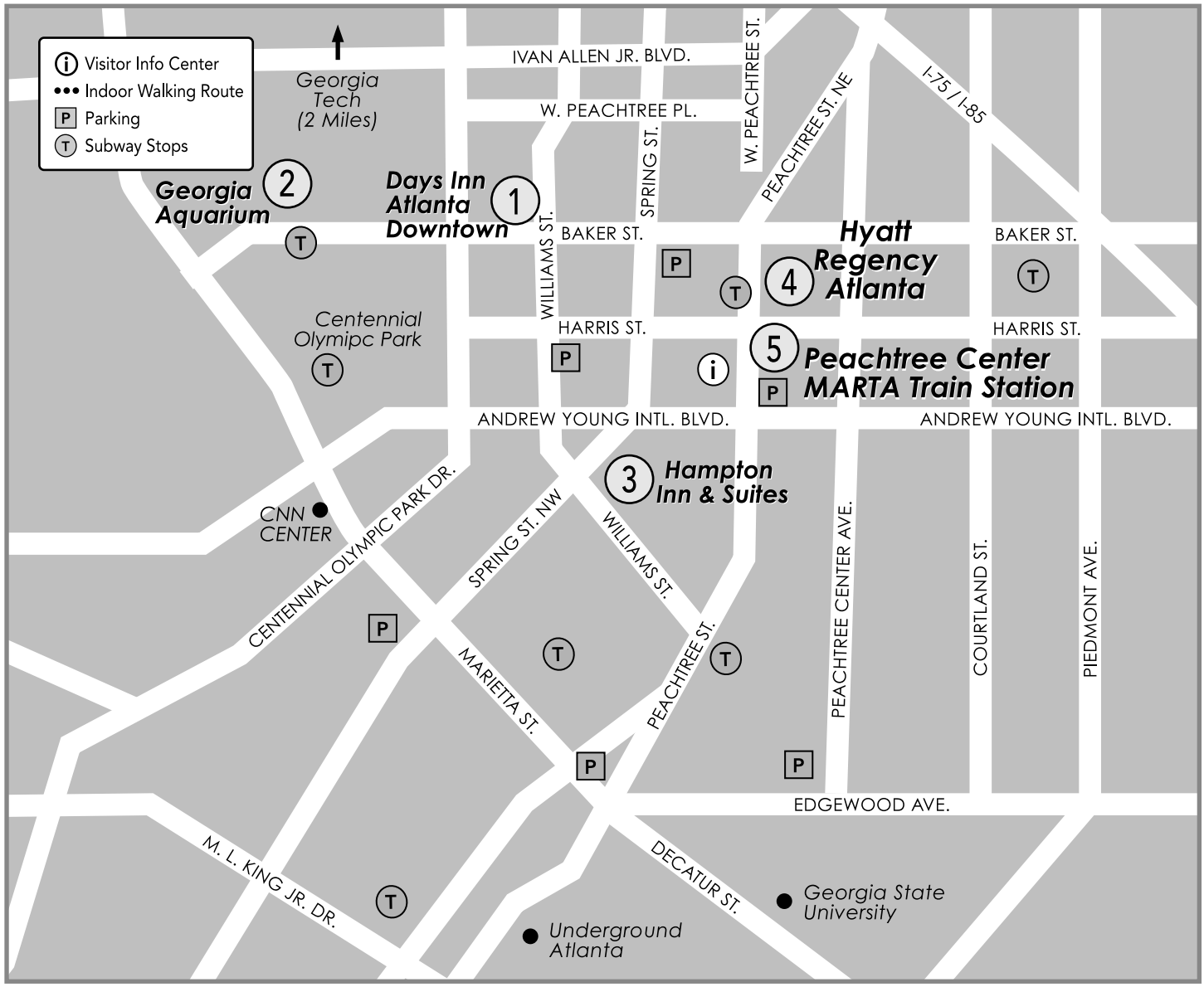
Conference Program

Atlanta, GA, USA | April 10 - 15, 2010

The 28th Annual CHI Conference
on Human Factors in Computing Systems
www.chi2010.org

SIGCHI special interest group computer human interaction

acm



Atlanta Downtown

1 Days Inn Atlanta Downtown
300 Spring Street NW
Atlanta, GA 30308
(404) 523-1144

2 Georgia Aquarium
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Atlanta, GA 30313
(404) 581-4000
www.georgiaaquarium.org

3 Hampton Inn & Suites Atlanta-Downtown
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Atlanta, GA 30303
(404) 589-1111

4 Hyatt Regency Atlanta
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Atlanta, GA 30303
(404) 577-1234

5 Peachtree Center MARTA Station
216 Peachtree Street
Atlanta, GA 30303

		Centennial 1	Centennial 2	Centennial 3	Centennial 4	Regency 5	Regency 6
	8:15–10:30	Opening Plenary Genevieve Bell - Messy Futures: Culture, Technology and Research (Followed by CHI Madness)					
MONDAY	11:30–13:00	Papers Organizations & Communities	Panel Addressing Challenges in International Field Research	Papers/Notes Multitasking	Papers Exploratory Search	Papers Social Support for Cancer Patients	Papers Privacy Awareness & Attitudes
	14:30–16:00	Papers Games and Players	Paper+Panel The Infrastructure Problem in HCI	Papers/Notes/ Case Studies Language 2.0	Papers Mobile Device	Papers The Age of Searching	Papers Privacy Behaviors
	16:30–18:00	Papers Dance, Dust, and Drama: Designing Design	Panel What Makes a Good Design Critic?	Papers Computing on the Body	Papers/Notes Organizing and Organizations	Papers/Notes Speech and Touch	Papers End-User Programming I
	8:00–8:45	CHI Madness					
TUESDAY	9:00–10:30	Papers Pointing and Selecting	Lifetime Practice Award Karen Holtzblatt	Papers Browsing	Papers/Notes At Home with Computing	Papers End User Programming 2	Papers/Notes Sharing in Social Media
	11:30–13:00-	Papers/Case Studies Medical Exploration	Panel Computing Technology in International Development	Papers Understanding and Supporting Programming	Papers/Notes/ Case Studies Tagging	Papers/Notes Sense and Sustainability	Papers/Notes Brains and Brawn
	14:30–16:00	Papers/Notes Input, Security, and Privacy Policies	Case Studies Software and Methods	Papers Tangible UI	Papers Crisis Informatics	Papers Avatars and Virtual Environments	Papers Seniors Using Technologies
	16:30–18:00	Lifetime Research Award Lucy Suchman	Panel E-Government: Services for Everyone, Everywhere, Eventually	Papers HCI for All	Papers/Notes Machine Learning & Web Interactions	Papers Caring for Ourselves	Papers/Notes Communicating
	8:00–8:45	CHI Madness					
WEDNESDAY	9:00–10:30	Social Impact Award Allison Druin and Ben Bederson	Panel Managing User Experience... Managing Change	Papers Looking with Video	Papers Privacy	Papers Expressing and Understanding Opinions in Social Media	Papers/Notes Pixels and Perception
	11:30–13:00	Papers/Case Studies Interactions in the World	Panel Making Food, Producing Sustainability	Papers/Notes Using Your Social Network	Papers/Notes Classroom Technologies	Papers Working with Medical Records	Papers Expertise
	14:30–16:00	Papers Medical Data	Paper+Panel Mapping the Landscape of Sustainable HCI	Papers/Notes Earth, Wind, and Flyer	Papers/Notes Social Media Users	Papers/Case Studies Tools Affecting the Enterprise	Papers/Notes Subtle Expressions Through Sound and Text
	16:30–18:00	Papers/Notes Remember and Reflect	Panel HCI, Communities and Politics	Papers/Notes Home Eco Behavior	Papers/Notes Sharing in Specific Communities	Papers/Notes/ Case Studies On the Phone	Papers Something Eye Catching
	8:15–8:45	CHI Madness					
THURSDAY	9:00–10:30	Papers/Notes Everyday Gestures	Invited Design Speaker Usman Haque	Papers Multitouch	Papers/Notes Perspectives on Design	Papers Public Displays	Papers Sensing
	11:30–13:00	Papers Displays Where You Least Expect Them	Panel Data and Information in the Palm of Our Hands	Papers/Case Studies Users and Attention on the Web	Papers Domestic Life	Papers/Notes/ Case Studies Cooking, Classrooms and Craft	Papers/Case Studies Software Understanding and Maintenance
	14:30–16:00				Papers Graphs	Papers/Notes No Touch	Papers/Notes HCI and the Developing World
	16:30–18:00	Closing Plenary Noel Sharkey - Doing What's Right With Robots: An Ethical Appraisal					

		Regency 7	Hanover CDE	Hanover FG	Chicago ABC	Commons/Grand Hall	Special Events
	8:15–10:30	Opening Plenary Genevieve Bell - Messy Futures: Culture, Technology and Research (Followed by CHI Madness)					
MONDAY	11:30–13:00	Papers Visualization	Papers Making Meaning in Large Displays	Papers/Notes EPIC #FAIL	SIG Current Issues in Improving Information Usability	Conference Reception & Exhibits Grand Opening 18:30–21:00 Media Showcase Interactivity Demos 18:30–21:00 Additional Interactivity Demo in Hanover A	Media Showcase Performance 11:30–13:00 Hanover A Media Showcase Performance 18:30–21:00 Commons
	14:30–16:00	Papers/Notes Interfaces & Visualization	Papers/Notes Market Models for Q&A Services	Case Studies Call Centers	SIG Understanding "Cool"		
	16:30–18:00	Papers Performance, Stagecraft and Magic	Papers Writing in the Real World	TOCHI Invited Papers Studying & Prototyping	SIG The Arts and Design Research in HCI		
	8:00–8:45	CHI Madness					
TUESDAY	9:00–10:30	Papers HCI & India	Papers Tactile Interaction	Papers User Characteristics & Large-Scale Tracking	SIG Best Practices in Longitudinal Research	Exhibits & Info Booth 10:30–18:00 Media Showcase Interactivity Demos 10:30 – 11:30 13:30 – 14:30 Media Showcase Performance Panel I 14:30 – 16:00 Commons Stage Media Showcase Interactivity Demo Panel I 16:30 – 18:00 Commons Stage	Spotlight on Work-in-Progress Posters (WIP 1–96) and Student Research Competition (SRC) 10:30–11:30 Commons and Lobby Media Showcase Performances 11:30–13:00 Commons Stage Job Fair 18:00–20:00 Commons Media Showcase Video Night 18:30–20:00 Centennial 2
	11:30–13:00	Papers Sharing Content and Searches	alt.chi Monsters Attack!	Papers/Notes Gesturing and Drawing	SIG The Impact of Mergers & Acquisitions on User-Experience Organizations		
	14:30–16:00	Papers/Notes Understanding Comments	alt.chi alt.ernative Methods	TOCHI UIDL for Next Generation UI	SIG Engineering Community		
	16:30–18:00	Papers/Notes Interaction Techniques	Papers Driving, Interrupted	TOCHI Input and Direct Manipulation	SIG CHI 2010 User Experience		
	8:00–8:45	CHI Madness					
WEDNESDAY	9:00–10:30	Papers/Case Studies Bang a Table	Papers Storytelling	Papers/Notes Humans and Sociability	SIG How to bring HCI Research and Practice Closer Together	Exhibits & Info Booth 10:30–18:00 Media Showcase Interactivity Demos 10:30 – 11:30 13:30 – 14:30 16:00 – 16:30 Media Showcase Interactivity Demo Panel II 14:30 – 16:00 Commons Stage Media Showcase Performances Panel II 16:30 – 18:00 Commons Stage	Spotlight on Work-in-Progress Posters (WIP 97-183), Student Design Competition (SDC), and Workshops 10:30–11:30 Commons and Lobby Media Showcase Performances 11:30–13:00 Commons Stage SIGCHI Membership Meeting 18:10–19:10 Centennial I Hospitality Events 18:30–20:30 Georgia Aquarium
	11:30–13:00	Papers/Notes Sound and Speech	alt.chi I Need Your Input	Papers/Notes Devising Input	SIG Creating Prosocial Media for Children		
	14:30–16:00	Papers/Notes Bikes and Buses	alt.chi Imagine all the People	Papers Death and Fear	SIG End User Software Engineering		
	16:30–18:00	Papers Therapy and Rehabilitation	Invited Design Activity Pachube – A Design Activity with Many Hands	TOCHI Activities, Access Control and Networking	SIG Designing User Interfaces for Multi-Touch and Surface-Gesture Devices		
	8:15–8:45	CHI Madness					
THURSDAY	9:00–10:30	Papers/Notes Usability Methods and New Domains	Papers HCI in China	Papers We Are Family	SIG Contextual User Experience: How to Reflect It in Interaction Designs?	Exhibits, & Info Booth 10:30–14:30 Media Showcase Interactivity Demos 10:30 – 11:30	Spotlight on Doctoral Consortium Posters 10:30–11:30 Commons Media Showcase Performances 11:30–13:00 Commons Stage
	11:30–13:00	Papers/Notes 1001 Users	Student Research Competition	Papers/Notes/ Case Studies Finding Your Mojo and Doing Some Good	SIG Management Community		
	14:30–16:00	Papers/Case Studies Shopping and Product Design	Student Design Competition	TOCHI Data Mining for Understanding User Needs	SIG Automotive User Interfaces		
	16:30–18:00	Closing Plenary Noel Sharkey - Doing What's Right With Robots: An Ethical Appraisal					

See Inside for CHI 2010 Conference-At-A-Glance

SUNDAY | COURSES

Human-Computer Interaction: Introduction and Overview

7:00 - 10:00 | REGENCY 5
INSTRUCTORS:
Keith Butler, *University of Washington, USA*
Robert Jacob, *Tufts University, USA*
David Kieras, *University of Michigan, USA*

Do Try This at Home! A Consumer's Guide CHI Research for Practitioners

7:00 - 10:00 | CHICAGO DEF
INSTRUCTOR:
Kath Straub, *Usability.org, USA*

MONDAY | COURSES

Designing a Task-Focused Conceptual Model

11:30 - 13:00 | CHICAGO DEF
INSTRUCTOR: Jeff Johnson, *UI Wizards, Inc.,* USA

Introduction to Social Network Analysis

11:30 - 18:00 | HONG KONG
INSTRUCTORS:
Marc Smith , *Telligent Systems, USA*
Panayiotis Zaphiris, *Cyprus University of Technology, Cyprus*
C.S. Ang, *University of Kent, UK*
Derek Hansen, *University of Maryland, USA*

Leading Innovation Workshops

11:30 - 18:00 | CAIRO
INSTRUCTORS:
Jim Nieters, *Yahoo!, USA*
Gesche Joost, *Deutsche Telekom Labs and Berlin Technical University, Germany*
Eric Bollman, *Yahoo!, USA*

Safety Critical Interaction: An Introduction to Usability in a Safe and Reliable Contexts

14:30 - 18:00 | CHICAGO DEF
INSTRUCTORS:
Philippe Palanque, *LIIHS-IRIT, Université Paul Sabatier Toulouse 3, France*
Michael Harrison, *Newcastle University, UK*

Label Placement in Forms and Other Time-Consuming Forms Controversies

16:30 - 18:00 | THE LEARNING CENTER
INSTRUCTOR:
Caroline Jarrett, *Effortmark Ltd, UK*

TUESDAY | COURSES

Innovations in Card Sorting: A Hands-on Approach

09:00 - 13:00 | CHICAGO DEF
INSTRUCTOR:
William Hudson, *Syntagm Ltd, United Kingdom*

Storyboarding for Designers and Design Researchers

09:00 - 13:00 | HONG KONG
INSTRUCTORS:
Pieter Jan Stappers, Froukje Sleeswijk Visser, Helma van Rijn, Walter Aprile, *ID-StudioLab, Delft University of Technology, the Netherlands*

Understanding Users in Context: An In-depth Introduction to Field Research

09:00 - 18:00 | CAIRO
INSTRUCTORS:
Susan Dray, David Siegel, *Dray & Associates, Inc., USA*

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

09:00 - 13:00 | THE LEARNING CENTER
INSTRUCTOR:
Steve Portigal, *Portigal Consulting, USA*

Managing a User Experience Department

14:30 - 18:00 | THE LEARNING CENTER
INSTRUCTOR:
Janice Rohn, *Consulting, USA*

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

14:30 - 18:00 | HONG KONG
INSTRUCTORS:
Allison Druin, Mona Leigh Guha, *University of Maryland, USA*
Jerry Fails, *Montclair State University, USA*

continued... →

You must register to attend courses.

WEDNESDAY | COURSES

Addressing Value Tensions During the Design Process

09:00 – 13:00 | HONG KONG
INSTRUCTORS:
Batya Friedman, *University of Washington, USA*
Lisa Nathan, *University of British Columbia, Canada*
Alan Borning , *University of Washington, USA*

Ajax Design and Usability

09:00 – 13:00 Course | THE LEARNING CENTER
INSTRUCTOR:
William Hudson, *Syntagm Ltd, UK*

Beyond Anecdotes: Analyzing and Interpreting Qualitative Data from Field Studies

09:00 – 18:00 | CAIRO
INSTRUCTOR:
David Siegel, *Dray & Associates, Inc., USA*

Empirical Research Methods for Human Computer Interaction

09:00 – 13:00 | CHICAGO DEF
INSTRUCTOR:
Scott MacKenzie, York University, Canada

Inspiring Mobile Interaction Design

14:30 – 18:00 | CHICAGO DEF
INSTRUCTORS:
Matt Jones, FIT Lab, Swansea University, UK
Gary Marsden, University of Cape Town, South Africa

Introduction to Research & Design for Sustainability

14:30 – 18:00 | HONG KONG
INSTRUCTORS:
Daniela Busse, *SAP Labs (Palo Alto), USA*
Eli Blevis, *Indiana University, USA*

Practical Statistics for Usability Testing

14:30 – 18:00 | THE LEARNING CENTER
INSTRUCTORS:
Jeff Sauro, *Oracle, Measuring Usability LLC, USA*

THURSDAY | COURSES

Advanced Research & Design for Sustainability

09:00 - 13:00 | CAIRO
INSTRUCTOR:
Daniela Busse, *SAP Labs (Palo Alto), USA*
Eli Blevis, *Indiana University (Bloomington), USA*

Developing an Effective Prototyping Strategy

09:00 - 13:00 | HONG KONG
INSTRUCTORS:
Jonathan Arnowitz, *Stroomt Interactions, The Netherlands*
Dirk-Jan Hoets, *Flipside Usability, The Netherlands*

Looking Below the Surface: Understanding and Analyzing Interaction Design

09:00 - 10:30 | THE LEARNING CENTER
INSTRUCTORS:
Karen Holtzblatt, David Rondeau, *InContext Enterprises, USA*

Model-Driven Inquiry: Beyond Ethnography

09:00 - 13:00 | CHICAGO DEF
INSTRUCTOR:
Larry Constantine, *University of Madeira, Portugal*

Cross-Cultural User-Experience Design: What? So What? Now What?

11:30 - 16:00 | THE LEARNING CENTER
INSTRUCTOR:
Aaron Marcus, *President, Aaron Marcus and Associates, Inc., USA*

Designing for the Unanticipated

14:30 - 16:00 | CAIRO
INSTRUCTOR:
Austin Henderson, *Pitney Bowes, USA*

Innovation Games@ for User Research in an Agile Environment

14:30 - 16:00 | CAIRO
INSTRUCTOR:
Nancy Frishberg, *MSB Associates, USA*

Using Web 2.0 to Learn About Users

14:30 - 16:00 | HONG KONG
INSTRUCTOR:
Kate Walser, *CX Insights, USA*

Welcome to CHI 2010!

CHI is where the latest advances in human-computer interaction can be found. CHI is a shared experience where people learn, discuss, share and interact with each other. CHI is a inclusive community, welcoming many different disciplines and a wide range of interests from research to to performance to practice. CHI provides a full program of many different venues and activities rich with opportunities to discover, learn, and interact.

CHI 2010 continues its four-day format and once again we have record numbers of submissions in all categories. Hundreds of people have devoted thousands of hours in reviewing and selecting those pieces of work that will be presented here. We have assembled a jam-packed program including refereed research publications, compelling new media performances, stimulating panel discussions, edgy explorations of the boundaries of HCI, design and research competitions for our students, invited speakers to inspire and inform our future activities, and many forums that enable our community to connect, discover, and learn from each other.

CHI 2010 looks outward to the human experience of computing in the world. This year's theme **"We are HCI"** challenges our community to embrace the diversity of human-computer interaction across the world and to exclaim our commitment as a profession to empower people from all walks of life. The contributions of our community are evident in the diversity of human experience. While we can rejoice in the growing relevance that human-computer interaction is experiencing in this millennium, we must also accept growing responsibility for our creations. The CHI 2010 Technical Program—starting with our invited plenary speakers and ending with interactive art exhibitions—extols us to understand our work in the context of the lived experience of human life and endeavor.

This year we've combined many of the experiential aspects of the CHI conference (such as interactive demos, videos, and design vignettes) into a cohesive **Media Showcase**. CHI 2010 attendees will have the opportunity to see, touch, squeeze, hear and even smell contrasting forms of HCI. The Media Showcase opens with our conference reception Monday evening and the Exhibition Hall will be alive with performances, interactive demonstrations and exhibits. Additionally, the video screening on Tuesday evening provides an opportunity for many different kinds of design, innovation, opinion and futurism to be presented to the community. We encourage you to come to our theater, grab some popcorn and enjoy the show.

Atlanta is a great site for CHI 2010. "The capital of the New South" has a vibrant and proud heritage in the civil rights movement as "the city too busy to hate". It is the home to many influential institutions such as The Carter Center, Centers for Disease Control and Prevention (CDC), CARE, and a wide range of business giants including Coca-Cola and Turner Broadcasting. Atlanta is the home to many researchers, designers, teachers, artists and practitioners who share a commitment to the human experience of computing: Georgia Tech and its GVU Center, SCAD Atlanta, Emory, Spelman College, Turner Broadcasting and CNN, The Carter Center, CARE, CDC, IBM, Philips, Moxie Interactive, Roundarch, Matter, Big Bang to name a few. We hope you are able to also explore this great city during your time with us, and hope you enjoy CHI 2010!

Elizabeth Mynatt, *Georgia Tech*
CHI 2010 Conference Chair

Keith Edwards, *Georgia Tech*
Tom Rodden, *University of Nottingham*
CHI 2010 Technical Program Chairs

CHI 2010 ORGANIZING COMMITTEE

Conference Chair
Elizabeth Mynatt, *Georgia Institute of Technology*

Conference Chair Assistant
Don Schoner, *Georgia Institute of Technology*

Student Volunteer Coordinators
Sara Drenner, *Inuvo*
Aaron Houssian, *Philips Research and Delft University of Technology*
Kurt Luther, *Georgia Institute of Technology*

TECHNICAL PROGRAM

Chairs
W. Keith Edwards, *Georgia Institute of Technology*
Tom Rodden, *University of Nottingham*

Papers
Geraldine Fitzpatrick, *Vienna University of Technology*
Scott Hudson, *Carnegie Mellon University*

Best Papers/Notes
Rebecca Grinter, *Georgia Institute of Technology*

Panels
Alex Taylor, *Microsoft Research*
Kenton O'Hara, *CSIRO ICT Centre*

Courses
Regina Bernhaupt, *Universität Salzburg*
Garett Dworman, *Tac-Ed*

Special Interest Groups
James Lin, *Google*
Ido Guy, *IBM Research*

Media Showcase
Carl F. Disalvo, *Georgia Institute of Technology*
Jason Freeman, *Georgia Institute of Technology*
Oscar Murillo, *Microsoft*
Ed H. Chi, *Palo Alto Research Center*
Shahram Izadi, *Microsoft Research*
Anijo Mathew, *Illinois Institute of Technology*
Scott Pobiner, *Parsons The New School for Design*

Case Studies
Gitte Lindgaard, *Carleton University*

Works in Progress
Amy Voida, *University of California, Irvine*
Stephen Voida, *University of California, Irvine*

Workshops
Tara Matthews, *IBM Research*
Jacob O. Wobbrock, *University of Washington*

Posters
Adam J. Sporka, *Czech Technical University in Prague*

alt.chi
Daniel Wigdor, *Microsoft Surface*
Tovi Grossman, *Autodesk*

Doctoral Consortium
Gilbert Cockton, *Northumbria University*
Wendy Kellogg, *IBM Research*

TOCHI Track
Jeffrey Nichols, *IBM Research*

Madness
Matt Jones, *Swansea University*
Max L. Wilson, *Swansea University*
Mira Dontcheva, *Adobe Systems*

Student Design Competition
Steve Brewster, *University of Glasgow*
Mike Glaser, *Drexel University*

Student Research Competition
Joanna McGrenere, *University of British Columbia*
Michael Terry, *University of Waterloo*

COMMUNITIES

Design
Anijo Mathew, *Illinois Institute of Technology*
Scott Pobiner, *Parsons The New School for Design*

User Experience
Elizabeth Buie, *Luminanze Consulting, LLC*
Susan Dray, *Dray & Associates, Inc.*
Keith Instone, *IBM*
Jhilmil Jain, *Hewlett-Packard Laboratories*

Engineering
Keith Butler, *University of Washington*

Management
Jim Nieters, *Yahoo*
Carola Thompson, *SAP*

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Yvonne Lopez, *Executive Events*

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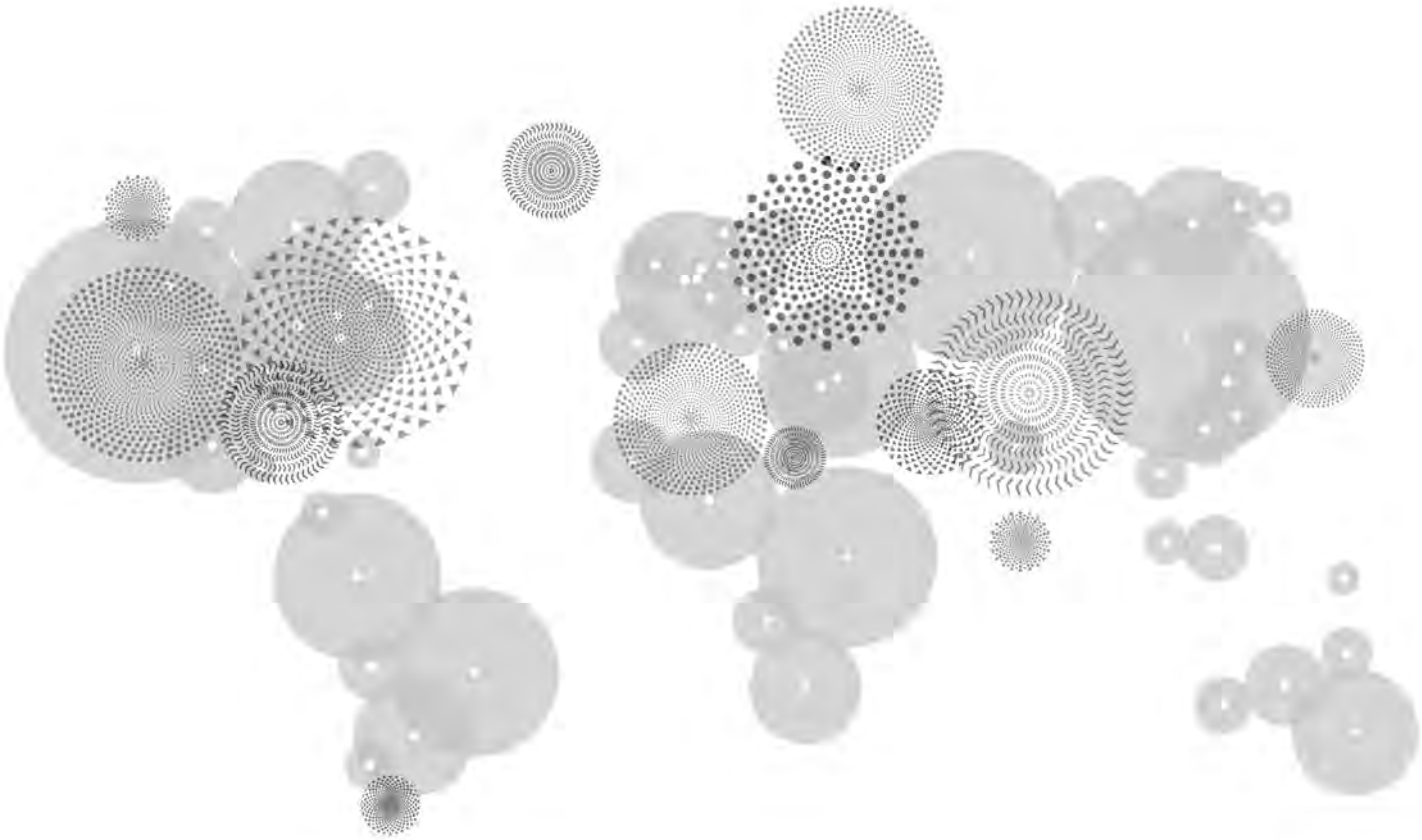

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Come and celebrate the launch of our new HCI book and chat informally with the authors!

Research Methods

in Human-Computer Interaction

Dr. Jonathan Lazar,
Dr. Jinjuan Heidi Feng
and **Dr. Harry Hochheiser**
Towson University

Universal praise for this key research textbook!

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Dr. Clare-Marie Karat, IBM TJ Watson Research, USA

"An excellent read for practitioners and students alike. It discusses all the must-know theory, provides detailed instructions on how to carry out the research, and offers great examples. I loved it!"

Professor Vanessa Evers, University of Amsterdam, the Netherlands

"A much needed and very useful book, covering important HCI research methods overlooked in standard research methods texts."

Professor Gilbert Cockton, Northumbria University, United Kingdom

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An Invitation

Stop by the Wiley stand, **Booth 23**, for an opportunity to meet the authors and get a signed copy of the book!

The authors will be on our stand
Monday 6.30pm-7.00pm *(Grand Opening)*,
Tuesday 4pm-4.30pm *(break)*
and **Wednesday 4pm-4.30pm** *(break)*
with champagne and British chocolate provided.

CHI 2010 we are HCI

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booth 7 & 8

Stop by for a latte! And enter to win Microsoft coffee mugs and award-winning hardware, software, and games. Come meet our researchers and designers and pick up your invitation to the reception, Wednesday, April 14, 6:30 to 8:30pm.

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Notes

General Information

ACM SIGCHI

CHI 2010 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 96,000 worldwide members cutting edge technical information through world-class journals and magazines, dynamic special interest groups, and globally recognized conferences. Visit www.acm.org for more information about the ACM.

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

Come to our membership meeting on Wednesday at 18:10 in Centennial 1, 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 2010 OVERVIEW

The CHI 2010 technical program showcases presentations of outstanding research in human-computer interaction (HCI), demonstrations of new and innovative technology, discussion of timely and controversial issues, and presentations of the latest developments in HCI design and practice.

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

Doctoral Consortium

Technology Square Research Building, Rooms 223 and 323
GVU Center
Georgia Tech Campus

The Doctoral Consortium provides an opportunity for invited doctoral students to explore their research interests in an interdisciplinary workshop with other students and a group of experienced researchers. Posters displaying the Doctoral Consortium participants' work will be on display in the Commons/Grand Hall. Brief descriptions of each poster can also be found in the CHI 2010 Extended Abstracts.

Doctoral Consortium Faculty:

Co-Chair:
Wendy Kellogg, *IBM T.J. Watson Research Center, USA*
Gilbert Cockton, *Northumbria University, UK*

Additonal Faculty:
Daniel Fällman, Umeå University, Sweden
Susan Fussell, *Cornell University, USA*
Per Ola Kristensson, *Cambridge University, UK*
Marianne Graves Petersen, *Århus*
Mary Beth Rosson, *Penn State University,USA*
John Thomas, *IBM, 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 Commons/Grand Hall Lobby on Wednesday.

TECHNICAL PROGRAM | MONDAY — THURSDAY

The CHI technical program includes presentations in multiple formats.

CHOOSING AND ATTENDING SESSIONS

With so many exciting opportunities happening at once, how do you choose? CHI 2010 has put some resources in place to help you make the most of your conference experience:

1. The CHI 2010 Conference Proceedings and Extended Abstracts contain information about each presentation. Additional copies of the proceedings, in both print and digital format, are available for sale at the Registration Desk.
2. Conference volunteers are also available to answer any questions you may have.
3. To help you decide how to spend your time during the day, each morning we present CHI Madness, a fast-paced overview of many of the presentations of the day. If you plan to leave during the middle of a session, please be considerate of the speakers and others around you by taking a seat near an exit. Similarly, if you plan to stay for the entire session, please move up to the front and center of the room. Presenters and other attendees will appreciate this.

CHI Madness (25 sec presentations)

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

Human-Computer Interaction Archive

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

CHI Papers (30 min presentations)

CHI Papers present significant contributions to research, development, and practice in all areas of the field of 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 (15 min presentations)

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

TOCHI Papers (20 min presentations)

This year papers from the journal ACM Transactions on Computer-Human Interaction, will be presented orally at CHI. Authors of papers that were published in TOCHI's 2009 volume 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.

Courses (one to four 90 min units)

The goal of Courses is to provide professional development opportunities to existing or prospective HCI community members. Courses are strictly limited and pre-registration is required; the Course notes you receive at registration will serve as your entry ticket. You may register for courses that have not yet been filled at the registration desk in the Centennial Foyer on Lower Level 1.

Case Studies (15 or 30 min presentations)

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

Panels (90 min sessions)

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

Special Interest Groups (SIGs) (90 min sessions)

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

alt.chi (15 min presentations)

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

Community Events (presentation length varies)

Community events sessions offer a variety of panels, talks, and presentations from practitioners and researchers at the forefront of their respective communities. Community-oriented panel discussions, SIGs, and invited talks are 90 minutes in length.

MEDIA SHOWCASE AND POSTERS

Media Showcase (interactivity demos, performances and video showcase)

New for CHI 2010 is the Media Showcase venue. Experience human-computer interaction hands-on, in performance, and on video. These presentations push the boundaries of tangible, multimodal, collaborative, creative, and multimedia interfaces. Hands-on demonstrations will be available during the Exhibits Grand Opening at the conference reception on Monday night, and throughout the rest of the week. Music and dance performances will take place on the Media Showcase Stage in the exhibition hall at the conference reception and at 11:30 am on Tuesday, Wednesday, and Thursday. A showcase of videos will be unveiled Tuesday evening and can also be viewed on the Media Showcase stage through the remainder of the week. Performers and demonstrators will also describe their research on scheduled conference panels on Tuesday and Wednesday afternoons. In addition to the works featured in the main exhibition room, there will be select performances and installations in an adjacent gallery room throughout the conference. (Hanover A).

Work-in-Progress (posters)

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

COMPETITIONS

Student Design Competition (posters and 20 min presentations)

This year's Student Design Competition (SDC) challenge was to design an object, interface, system, or service intended to encourage people to take a walk. 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 ten entries were selected from a record number of 91 submissions. The ten finalists were invited to submit a poster detailing their solutions. Students' work will be displayed in the Poster Area of the Grand Hall. SDC judges will select four finalists to present their work in a special SDC session on Thursday morning. See if you can guess the winners; they will be will be announced at the closing plenary session on Thursday.

Student Research Competition (posters and 20 min presentations)

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

SPECIAL EVENTS

CONFERENCE RECEPTION & EXHIBITS GRAND OPENING

The Commons (Grand Hall, Lower Level 2)
Monday, 18:30 – 21:00

To celebrate CHI 2010 we are kicking off the conference with a special opening reception and entertainment event featuring Bioluminescence. Bioluminescence is a performance by R. Luke DuBois and Lesley Flanigan that explores the modality of human voice. The voice has a unique role in our musical culture, bridging the linguistic and the semiotic in a way that transcends instrumentality through a highly personal embodiment of musicianship. DuBois and Flanigan investigate the possibilities of the improvised voice in tandem with electroacoustic processing. The interplay between the two performers (one singing, one processing) engages the metaphor of the voice as impulse and the computer as filter, creating a dense palette of evocative sounds and images derived entirely from the voice of the singer. Using custom software written by DuBois, Flanigan's voice is restructured live and in real time through spectral processing. While the two performers partake in a "dialogue" of sounds and words, the changing shape of the voice is traced visually through live video, leaving trails that evoke the memory of voice. These visuals act as a sonogram, allowing us to see what is heard in relation to how we are listening.

You will also have a chance to visit our Media Showcase Interactivity Demo presenters. 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.

JOB FAIR

The Commons (Grand Hall, Lower Level 2)
Tuesday, 18:00 – 20:00

CHI 2010 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:

Google, Inc. (exhibiting)
Microsoft Corp. (exhibiting)
Yahoo! Inc. (exhibiting)

CHI Contributor Recruiters:

Autodesk
Bloomberg (exhibiting)
IBM Research
Intel
Nokia
SAP

Other Recruiters:

FX Palo Alto Laboratory, Inc.

ACM SIGCHI MEMBER MEETING

Centennial 1
Wednesday, 18:10 – 19:10

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

HOSPITALITY RECEPTIONS AT THE GEORGIA AQUARIUM

Georgia Aquarium
225 Baker Street NW, Atlanta, GA 30313
Wednesday, 18:30 – 20:30

This year, the open hospitality receptions will be held at the beautiful Georgia Aquarium. Your badge is your ticket to enter the aquarium, so be sure to wear it. In addition to meeting our hosts and networking with old and new colleagues, you can visit all of the fascinating exhibits which will be specially open for our conference attendees.

CHI Champions:

Google, Inc.
Microsoft Corp.

CHI Contributors

Bloomberg
IBM Research

Friends of CHI

Georgia Tech

Other Hosts

Carnegie Mellon University
Virginia Tech & University of California Irvine & Penn State

VENUE INFORMATION

INTERNET ACCESS

Wireless internet access throughout the lobby level public space of the Hyatt Regency Atlanta is provided by the hotel and included in your CHI 2010 room rate.

Wireless high-speed internet access for your laptop is being provided in the internet Café Area of the Commons (Grand Hall)by CHI 2010. 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.

REGISTRATION

Hyatt Regency Atlanta, Centennial Ballroom Foyer (Lower Level 1)

The CHI 2010 Registration area is located on Lower Level 1 of the Hyatt Regency, outside the Centennial Ballroom. Pre-registered participants must pick up their badges and conference materials in this area. On-site registration for the conference and courses (subject to space availability) is located here as well.

Registration Hours:

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

THE COMMONS

Inside the Grand Hall (Lower Level 2)

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

Commons Hours:

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

COFFEE BREAKS

Regularly scheduled morning and afternoon coffee breaks are complimentary for all registered CHI 2010 delegates. The coffee break schedule is as follows:

Monday
10:30 – 11:30: Grand Hall Foyer, Lower Level 2
16:00 – 16:30: Grand Hall Foyer, Lower Level 2

Tuesday
10:30 – 11:30: Grand Hall (Commons), Lower Level 2
16:00 – 16:30: Grand Hall (Commons), Lower Level 2

Wednesday
10:30 – 11:30: Grand Hall (Commons), Lower Level 2
16:00 – 16:30: Grand Hall (Commons), Lower Level 2

Thursday
10:30 – 11:30: Grand Hall (Commons), Lower Level 2
16:00 – 16:30: Grand Hall Foyer, Lower Level 2

CHI MERCHANDISE

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

The CHI Information Booth in the Commons is staffed by CHI Local Members and Student Volunteers who can answer your CHI 2010 questions and assist with recruiting and special needs.

CHI INFORMATION BOOTH

The Commons (Grand Hall)

The info booth is staffed by local CHI Members and Student Volunteers who can answer your CHI 2010 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

CHI Information Booth Hours:

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

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

STUDENT VOLUNTEERS

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

INTERNATIONAL RELATIONS

CHI 2010 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 2010 meeting space at the Hyatt 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 hotel's inventory.

RECRUITING BOARDS
The Commons (Grand Hall, Lower Level 2)

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

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

SPEAKER READY ROOM
Kennesaw Room (Lower Level 3)

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

Speaker ready room hours are:

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

MEDIA/PRESS OFFICE
Inman Room (Lower Level 3)

CHI 2010 welcomes members of the media. Please stop by the Media/Press Office to get information on scheduled Media Events this week, and to learn more about CHI 2010, SIGCHI, and future CHI conferences. CHI 2010 media coordinators will be happy to schedule interviews with select authors at the conference. The Media/Press Office will be open at the same hours as Conference Registration.

CHI POLICIES

CELL PHONE COURTESY

Please be considerate in your cell phone use. CHI 2010 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 2010 name badge serves as your admission pass to conference sessions and events. Please wear your name badge at all times while inside the conference center. Conference management reserves the right to deny admission to any persons not wearing a CHI 2010 name badge.

BLOGGING & PHOTOSHARING

CHI encourages conference participants to blog CHI while at the event. Please add the category or keyword "CHI 2010" 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 2010" to your photos. Add "#chi2010" to your tweets to participate in Twitter conversations.

ACCOMPANYING PERSONS

CHI 2010 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 2010 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 the USA are 120 volts. If you are traveling from outside the USA, you will need an adapter to use your small appliances, if they are designed for a different standard. CHI 2010 does not provide power converters, extension cords, power strips or other electric accessories.

SERVICES

ATMS

Two ATMs are located in the hotel lobby, one near the front desk and one near the bar.

SHOPPING & DINING

The Hyatt Regency Atlanta is directly connected to the Mall at Peachtree Center, a three-level indoor plaza with over 60 specialty shops, including six full-scale restaurants and two food courts with 18 quick-dining outlets. Visit the Hyatt Concierge Desk for additional information.

FIRST AID / EMERGENCIES

Your safety is our primary concern. In case of an emergency. please contact the registration desk or the Conference Office (located in the Fairlie Room on Lower Level 3) immediately for assistance. The Hyatt Security Department will respond to all emergencies inside the building. Dial the Hotel Emergency Line (x55) from any house phone.

LOST & FOUND

Please turn all lost and found items in to the Registration Desk. CHI 2010 management will then turn lost and found items over to building security at the conclusion of the conference.

BUSINESS & OTHER SERVICES

There is a FedEx Office business center located in the main lobby of the hotel.

Monday through Friday	07:00 - 19:00
Saturday	09:00 - 17:00
Sunday	09:00 - 13:00

FedEx self-service is open twenty-four hours every day with your hotel room key.

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

ATLANTA, GEORGIA

The center of industry for the Southern United States, Atlanta is a city of big business. Worldwide brands such Coca-Cola, Turner Media, Delta, and Home Depot call this modern city home. Only in Atlanta can you…

… see the largest fish in the largest Aquarium in the world. The Georgia Aquarium, home to the only whale sharks in North America, is open daily and will also be the site of Wednesday evening's Hospitality events.

… have a "Coke and a Smile" at the brand-new World of Coca-Cola, located next door to the Georgia Aquarium. The Cola-Cola tasting lounge features more than 70 Coke products from around the world.

… race the gold shoes for a gold medal. As host of the 1996 Olympic games, Atlanta continues to commemorate the Olympics in Centennial Olympic Park. Visit this outdoor expanse to see the world's largest fountain, the Fountain of Rings.

… be a meteorologist and a news anchor in the same day, on the CNN Center tour. Headquarters of Turner Broadcasting Corporation, the Inside CNN studio tour provides a behind-the-scenes look into the famous newsroom.

…. visit the world's busiest airport, which you may have already done on the way into town! Atlanta's Hartsfield-Jackson International Airport services more than 90 million passengers every year.

Atlanta also has a rich cultural heritage; home to esteemed historic figures such as Margaret Mitchell, author of *Gone With the Wind*, former U.S. President Jimmy Carter, and civil rights leader Martin Luther King, Jr. The Martin Luther King, Jr. National Historic Site and visitors center, located in the Sweet Auburn district, is open daily and features exhibits about King's life and the civil rights struggle.

For additional information on Atlanta, visit the Hyatt Concierge Desk and look for your Atlanta guide in your conference bag.

CITY TRANSPORTATION

Atlanta's mass transit system, MARTA, provides a convenient ride for $2.00. MARTA's A to Z Route connects visitors with the Georgia Aquarium and Zoo Atlanta. The Peach, or MARTA Route 110, travels from Lenox Square to the Georgia State Capitol with stops at popular locations. The closest MARTA station is located right inside the attached Peachtree Center Mall.

CHI ACADEMY

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

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

Susanne Bødker

Susanne Bødker is a Professor of Computer Science at Aarhus University in Denmark. She employed Activity Theory in her dissertation research, published as the book "Through the Interface" in 1990, and contributed to the broad post-cognitive rethinking of theory in HCI. She helped to establish CSCW as a research area. She has developed and practiced participatory design methods in a wide variety of user domains from work safety inspection to public administration. Her current work is developing activity theoretical approaches to ubiquitous technologies, social navigation, and community technology.

Mary Czerwinski

Mary Czerwinski is the Research Area Manager of the Visualization and Interaction Group at Microsoft Research. Mary's research focuses on designing novel information visualization and interaction techniques for a wide variety of devices, display sizes, and applications. Much of Mary's work focuses on improved designs for managing interruptions, multitasking and group awareness. Prior to joining Microsoft Research, Mary managed the usability group in the interactive media division of Microsoft and previously led user research groups at Compaq and Johnson Space Center. Mary has been an affiliate member of the Psychology Departments at the University of Washington and Rice University, and sits on several academic and professional advisory boards. Mary is a distinguished scientist of the ACM. She has served on the ACM SIGCHI Executive Committee since 2001, and as conference chair for UIST 2005 and co-chair for CHI 2008.

Austin Henderson

Austin Henderson's 45-year career in Human-Computer Interaction includes user interface research and architecture at MIT's Lincoln Laboratory, Bolt Beranek and Newman, Xerox Research (both PARC and EuroPARC), Apple Computer, and Pitney Bowes, as well as strategic industrial design with Fitch and his own Rivendel Consulting & Design. Austin has built both commercial and research applications in many domains including manufacturing, programming languages, air traffic control, electronic mail (Hermes), user interface design tools (Trillium), workspace management (Rooms, Buttons), distributed collaboration (MediaSpace), and user-evolvable systems (Tailorable – "design continued in use", Pliant – "designing for the unanticipated"). These applications, and their development with users, have grounded his analytical work, which has included the nature of computation-based socio-technical systems, the interaction of people with the technology in those systems, and the practices and tools of their development. The primary goals of his work has been to better meet user needs, both by improving system development to better anticipate those needs, and by improving system capability to enable users themselves to better respond to unanticipated needs when they arise in a rich and changing world.

David Kieras

David is Professor of Electrical Engineering and Computer Science at the University of Michigan who has been an outstanding researcher, teacher, and mentor in areas that span many theoretical and applied aspects of HCI principles and methods. His most prominent contributions to HCI have come in the form of computational models of human performance, starting with his work with Peter Polson on the Cognitive Complexity Theory, epitomized by the classic 1985 International Journal of Man-Machine Studies paper, which provided a seminal application of production systems to produce quantitative accounts of performance time and knowledge transfer from one interface task to another. Viewing production systems as an implementation of GOMS models, he developed NGOMSL as a practical predictive notation to for GOMS models. With Scott Wood, he created the GLEAN system for computational simulations of GOMS models, and with Ruven Brooks he developed an approach to task analysis and the design of functionality based on higher-level GOMS models. With David Meyer, he developed the EPIC cognitive architecture to integrate perceptual, motor, and cognitive performance, pioneering the rigorous application of cognitive architectures to the fine-grain modeling of multimodal user interaction and multitasking performance.

Aaron Marcus

Arnie Lund is a Director of User Experience (UX) at Microsoft, and has also managed UX teams at AT&T Bell Labs, Ameritech, US West Advanced Technologies and Sapient. He is known for his work in research and practice, and his success as a manager driving research into practice. He has 20+ patents and has published widely. He has co-chaired two CHI conferences; and has been an active "bridge" between SIGCHI and HFES where he is a Fellow and chaired the HFES Institute that created the first HCI ANSI Standard. He has funded and collaborated on research at a variety of universities and other research institutions. He and his teams have driven product innovations in areas such as interactive television, natural user interfaces, CSCW, media convergence, and in the software innovation and design process itself. Arnie has consistently contributed both through his thought leadership and through his ability to lead to further the impact of HCI.

Larry Tesler

Larry is a user experience consultant who has played a leading role in the development of today's 'desktop' user interface. In 1973, after working at Stanford on the PUB document compiler, he moved to Xerox PARC to work on publishing software. He identified and publicized the need to eradicate unnecessary modes from user interfaces, to the extent that this is now standard design practice. At PARC he pioneered the use of formative usability studies, and was closely involved in the invention of a number of now-familiar interaction techniques. These included cut-and-paste editing, click-and-type text entry, dialogue boxes for search and replace, between-character text insertion points, drop-down menus and paned-window browsing. At Apple during the 1980s and 1990s, Larry managed groups doing user experience design innovation, including the Advanced Technology Group and the Lisa office suite team. Subsequently he worked as Vice President for User Experience at both Amazon and Yahoo, before turning to independent consulting.

Shumin Zhai

Shumin Zhai is a Research Staff Member at the IBM Almaden Research Center. Shumin is a leading researcher in applying quantitative and engineering methods in HCI, and has made fundamental contributions to text entry optimization, physical input device design, eye-tracking interfaces, and the understanding of human performance. His contributions to text entry techniques for mobile and touch screen devices include the ShapeWriter gesture keyboard which has been commercialized. Shumin has also been a visiting professor at universities in Europe and China. He has served on many editorial boards and conference committees and is currently the Editor-in-Chief of ACM Transactions on Computer-Human Interaction.

Congratulations to this year's Academy.

CHI LIFETIME RESEARCH AWARD

The CHI Lifetime Research Award is presented to individuals for outstanding contributions to the study of human-computer interaction. This award recognizes the very best, most fundamental and influential research contributions. It is awarded for a lifetime of innovation and leadership. The criteria for the award are cumulative contributions to the field; influence on the work of others; and development of new research directions.

This year we present the CHI Lifetime Research Award to Lucy Suchman.

Lucy Suchman

Lucy Suchman is Professor of Anthropology of Science and Technology in the Department of Sociology at Lancaster University. Before coming to Lancaster, she held the positions of Principal Scientist and manager of the Work Practice and Technology area at Xerox's Palo Alto Research Center. Lucy is well known for having challenged common assumptions behind the design of interactive systems with a cogent anthropological argument that human action is constantly constructed and reconstructed from dynamic interactions with the material and social worlds. She recently published an updated and expanded version of her classic book: Human-Machine Reconfigurations: Plans and Situated Actions (Cambridge University Press, 2007).

LIFETIME SERVICE AWARD

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

Mary Czerwinski

Mary Czerwinski is the Research Area Manager of the Visualization and Interaction Group at Microsoft Research, and is a distinguished scientist of the ACM. She has a long record of exemplary service to the HCI community, serving in many roles on the committee for various SIGCHI-sponsored conferences, notably CHI and UIST. She also has taken on key leadership roles: CHI 2000 Papers co-chair, CHI 2008 Conference co-chair, UIST 2005 Conference co-chair, and UIST 2010 Papers co-chair. She also served on the SIGCHI Executive Committee from 2001 to 2009, including two consecutive terms as Executive Vice President.

CHI LIFETIME PRACTICE AWARD

The CHI Lifetime Practice Award is presented to individuals for outstanding contributions to the practice and understanding of human-computer interaction. This award recognizes the very best and most influential applications of human-computer interaction. It is awarded for a lifetime of innovation and leadership. The criteria for the award are cumulative contributions to the field directly and through the leadership of others; innovation and the stimulation of innovation through practice; impact on the field, industry, and society; influence on the work of others, and the growth of other HCI practitioners and researchers; and successful application of human-computer interaction to products, services, and systems.

Karen Holtzblatt

Recognized as a leader in the design community, Karen Holtzblatt has pioneered transformative ideas and design approaches throughout her career. At Digital Equipment Corporation, Karen introduced Contextual Inquiry — the industry standard for gathering field data to understand how technology impacts the way people work. Contextual Inquiry and Contextual Design, the team based design processes based on it provide a revolutionary approach for designing new products and systems based on a deep understanding of the context of use. Karen co-founded InContext Enterprises in 1992 to provide Contextual Design services. Their coaching and cross-company design teams deliver field data and solutions to businesses across multiple industries. The books, Contextual Design: Defining Customer Centered Systems, and Rapid Contextual Design, are used by companies and universities all over the world. Karen's extensive experience with teams and all types of work and life practice underlies the innovation and reliable quality consistently delivered by InContext's teams. Karen also has more than 20 years of teaching experience, professionally and in university settings.

SOCIAL IMPACT AWARD

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

Allison Druin

Allison Druin is Associate Professor in the College of Information Studies at the University of Maryland and Director of the Human-Computer Interaction Lab. Prof. Druin is a pioneer in the development of technology for children and the inclusion of children as partners in the design process. Her technology co-design methods have been reported on through scholarly publications, presentations, and books, and have become widely used throughout the CHI community. She founded the CHIKids program for the CHI Conference. This program enabled many CHI community members who were parents to participate in the conference while their children learned about CHI and contributed to the experience of the conference, e.g., by producing daily newsletters, websites, and plenary session videos. With her collaborator, Prof. Ben Bederson, she created the International Children's Digital Library, a multilingual free digital library of children's books, currently consisting of over 4,000 books in over 50 languages, with more than three million users from over 160 countries worldwide.

Ben Bederson

Ben Bederson is Associate Professor of Computer Science at the University of Maryland and past Director of the Human-Computer Interaction Laboratory there. With his collaborator, Prof. Allison Druin, he led the development of many of the key technologies designed for and by kids, including KidPad and StoryKit for iPhone. He is the Technical Project Director for the International Children's Digital Library, a multilingual free digital library of children's books, currently consisting of over 4,000 books in over 50 languages, with more than three million users from over 160 countries worldwide. He led the library's collaboration with the Government of Mongolia – bringing access to the library in rural Mongola. Prof. Bederson also did influential studies of the usability of electronic voting systems, which resulted in scholarly publications, reports aimed at policy makers, and books directed to the general public. This work has served to highlight the challenges in developing usable electronic voting systems and has informed decisions on voting technology adoption.

PAST HONOREES

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 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

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

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

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

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

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

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

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

SIGCHI Social Impact Award

2009 Helen Petrie
2008 Vicki Hanson
2007 Gregory Abowd, Gary Marsden
2006 Ted Henter
2005 Gregg Vanderheiden

SIGCHI Lifetime Service Award

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

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 2010 and to our field.

SIGCHI BEST OF CHI 2010 COMMITTEE:

Paul M. Aoki, *Intel Research, Berkeley*
Steve Benford, *University of Nottingham*
Paul Dourish, *University of California, Irvine*
Thomas A. Finholt, *University of Michigan*
Jodi Forlizzi, *Carnegie Mellon University*
Rebecca E. Grinter (chair), *Georgia Institute of Technology*

CHI 2010 BEST PAPERS, AWARDED BY SIGCHI

How does search behavior change as search becomes more difficult? (page 25)
Anne Aula, Rehan M. Khan, Zhiwei Guan, *Google, USA*

The Tower of Babel Meets Web 2.0: User-Generated Content and its Applications in a Multilingual Context (page 27)
Brent Hecht, *Northwestern University, USA*
Darren Gergle, *Northwestern University, USA*

Occlusion-Aware Interfaces (page 28)
Daniel Vogel, University of Toronto, *Mount Allison University, Canada*
Ravin Balakrishnan, *University of Toronto, Canada*

Skinput: Appropriating the Body as an Input Surface (page 36)
Chris Harrison, *Carnegie Mellon University, USA*
Desney Tan, Dan Morris, *Microsoft Research, USA*

Avaaj Otalo | A Field Study of an Interactive Voice Forum for Small Farmers in Rural India (page 36)
Neil Patel, *Stanford University, USA*
Deepti Chittamuru, *University of California at Berkeley, USA*
Anupam Jain, *IBM India Research Laboratory, India*
Paresh Dave, *Development Support Center, India*
Tapan S. Parikh, *University of California at Berkeley, USA*

Lumino: Tangible Blocks for Tabletop Computers Based on Glass Fiber Bundles (page 43)
Patrick Baudisch, Torsten Becker, Frederik Rudeck, *Hasso Plattner Institute, Germany*

Feminist HCI: Taking Stock and Outlining an Agenda for Design (page 46)
Shaowen Bardzell, *Indiana University, USA*

Prefab: Implementing Advanced Behaviors Using Pixel-Based Reverse Engineering of Interface Structure (page 51)
Morgan Dixon, James Fogarty, *University of Washington, USA*

Mobile-izing Health Workers in Rural India (page 58)
Divya Ramachandran, John Canny, *University of California, at Berkeley, USA*
Prabhu Dutta Das, *Dhirubhai Ambani Institute of Information and Communications Technology, India*
Edward Cutrell, *Microsoft Research India, India*

Mapping the Landscape of Sustainable HCI (page 58)
Carl DiSalvo, *Georgia Tech, USA*
Phoebe Sengers, Hrönn Brynjarsdóttir, *Cornell University, USA*

The Design of Eco-Feedback Technology (page 62)
Jon Froehlich, Leah Findlater, James Landay, *University of Washington, USA*

Useful Junk? The Effects of Visual Embellishment on Comprehension and Memorability of Charts (page 76)
Scott Bateman, Regan L. Mandryk, Carl Gutwin, Aaron Genest, David McDine, Christopher Brooks, *University of Saskatchewan, Canada*

CHI 2010 HONORABLE MENTION PAPERS, AWARDED BY SIGCHI

Across Boundaries of Influence and Accountability: The Multiple Scales of Public Sector Information Systems (24)
Christopher A. Le Dantec, W. Keith Edwards, *Georgia Institute of Technology, U.S.A.*

Evaluating Cues for Resuming Interrupted Programming Tasks (page 24)
Chris Parnin, *Georgia Institute of Technology, USA*
Robert DeLine, *Microsoft Research, USA*

Multitasking Bar: Prototype and Evaluation of Introducing the Task Concept into a Browser (page 24)
Qing Wang, Huiyou Chang, *Sun Yat-Sen University, China*

Effects of Popularity and Quality on the Usage of Query Suggestions during Information Search (page 25)
Diane Kelly, Amber Cushing, Maureen Dostert, Xi Niu, Karl Gyllstrom, *University of North Carolina, USA*

Crowdsourcing Graphical Perception: Using Mechanical Turk to Assess Visualization Design (page 25)
Jeffrey Heer, Michael Bostock, *Stanford University, USA*

Space to Think: Large, High-Resolution Displays for Sensemaking (page 26)
Christopher Andrews, Alex Endert, Chris North, *Virginia Polytechnic Institute and State University, USA*

SHRIMP - Solving Collision and Out of Vocabulary Problems in Mobile Predictive Input with Motion Gesture (page 26)
Jingtao Wang, *University of California at Berkeley, USA*
Shumin Zhai, *IBM Almaden Research Center, USA*
John Canny, *University of California at Berkeley, USA*

CrossTrainer: Testing the Use of Multimodal Interfaces in Situ (page 27)
Eve Hoggan, Stephen Brewster, *University of Glasgow, UK*

Attractive Phones Don't Have To Work Better: Independent Effects of Attractiveness, Effectiveness, and Efficiency on Perceived Usability (page 28)
Jeffrey M. Quinn, Tuan Q. Tran, *Sprint Nextel, USA*

The True Cost of Unusable Password Policies: Password Use in the Wild (page 28)
Philip Inglesant, M. Angela Sasse, *University College London, UK*

The Case of the Disappearing Ox: Seeing Through Digital Images to An Analysis of Ancient Texts (page 30)
Grace de la Flor, *University of Oxford, UK*
Paul Luff, *King's College, UK*
Marina Jirotka, Ruth Kirkham, John Pybus, Annamaria Carusi, *Oxford University of Oxford, UK*

i*CATch: A Scalable, Plug-n-Play Wearable Computing Framework for Novices and Children (page 30)
Grace Ngai, Stephen C.F. Chan, Vincent T.Y. Ng, Joey C.Y. Cheung, Sam S.S. Choy, Winnie W.Y. Lau, Jason T.P. Tse, *Hong Kong Polytechnic University, Hong Kong*

Example-Centric Programming: Integrating Web Search into the Development Environment (page 31)
Joel Brandt, Stanford University Adobe Systems, USA
Mira Dontcheva, Marcos Weskamp, *Adobe Systems, USA*
Scott Klemmer, *Stanford University, USA*

An Exploratory Study of Unsupervised Mobile Learning in Rural India (page 36)
Anuj Kumar, *Carnegie Mellon University, USA*
Anuj Tewari, *University of California at Berkeley, USA*
Geeta Shroff, *Carnegie Mellon University, USA*
Deepti Chittamuru, *University of California at Berkeley, USA*
Matthew Kam, *Carnegie Mellon University, USA*
John Canny, *University of California at Berkeley, USA*

End-User Mashup Programming: Through the Design Lens (page 38)
Jill Cao, *Oregon State University, USA*
Yann Riche, *Riche Design, USA*
Susan Wiedenbeck, *Drexel University, USA*
Margaret Burnett, *Oregon State University, USA*
Valentina Grigoreanu, *Oregon State University, Microsoft Corporation, USA*

What Would Other Programmers Do? Suggesting Solutions to Error Messages (page 38)
Björn Hartmann, *University of California at Berkeley, USA*
Daniel MacDougall, Joel Brandt, Scott R. Klemmer, *Stanford University, USA*

Social Tagging Revamped: Supporting the Users' Need of Self-promotion through Social Filtering (page 39)
Mauro Cherubini, *Telefónica Research, Spain*
Alejandro Gutierrez, *University of Illinois at Urbana-Champaign, USA*
Rodrigo de Oliveira, Nuria Oliver, *Telefónica Research, Spain*

MOSES: Exploring New Ground in Media and Post-Conflict Reconciliation (page 43)
Thomas N. Smyth, John Etherton, Michael L. Best, *Georgia Institute of Technology, USA*

Blogging in a Region of Violent Conflict: Supporting Transition to Recovery (page 43)
Ban Al-Ani, Gloria Mark, Bryan Semaan, *University of California, at Irvine, USA*

PointAssist for Older Adults: Analyzing Sub-Movement Characteristics to Aid in Pointing Tasks (page 44)
Juan Pablo Hourcade, Christopher M. Nguyen, Keith B. Perry, Natalie L. Denburg, *University of Iowa, USA*

Why it's Quick to be Square: Modelling New and Existing Hierarchical Menu Designs (page 34)
David Ahlström, *Klagenfurt University, Austria*
Andy Cockburn, *University of Canterbury, New Zealand*
Carl Gutwin, *University of Saskatchewan, Canada*
Pourang Irani, *University of Manitoba, Canada*

Experience, Adjustment, and Engagement: The Role of Video in Law Enforcement (page 50)
Joe Tullio, *Motorola, Inc., USA*
Elaine Huang, *University of Calgary, Canada*
David Wheatley, Harry Zhang, Claudia Guerrero, *Motorola, Inc., USA*
Amruta Tamdoo, *University of Illinois, Chicago, USA*

ToolClips: An Investigation of Contextual Video Assistance for Functionality Understanding (page 50)
Tovi Grossman, George Fitzmaurice, Autodesk Research, Canada

Moving Beyond Untagging: Photo Privacy in a Tagged World (page 50)
Andrew Besmer, Heather Richter Lipford, *University of North Carolina at Charlotte, USA*

Expressive Robots in Education (page 55)
Martin Saerbeck, *Eindhoven University of Technology, Netherlands*
Tom Schut, *Philips Research, Netherlands*Christoph Bartneck, *Eindhoven University of Technology, Netherlands*Maddy D. Janse, *Philips Research, Netherlands*

Exploring Affective Technologies for the Classroom with the Subtle Stone (page 55)
Madeline Balaam, *University of Sussex, UK*
Geraldine Fitzpatrick, *Vienna University of Technology, Austria*
Judith Good, *University of Sussex, UK*
Rosemary Luckin, *London Knowledge Lab, UK*

How Power Users Help and Hinder Open Bug Reporting (page55)
Andrew J. Ko, Parmit K. Chilana, *University of Washington, USA*

Clutching at Straws: Using Tangible Interaction to Provide Non-Visual Access to Graphs (page 56)
David McGookin, Euan Robertson, Stephen Brewster, *University of Glasgow, UK*

Lurking? Cyclopaths? A Quantitative Lifecycle Analysis of User Behavior in a Geowiki (page 59)
Katherine Panciera, Reid Priedhorsky, *University of Minnesota, USA*
Thomas Erickson, *IBM, USA*
Loren Terveen, *University of Minnesota, USA*

SoundNet: Investigating a Language Composed of Environmental Sounds (page 59)
Xiaojuan Ma, Christiane Fellbaum, Perry Cook, *Princeton University, USA*

OneBusAway: Results from Providing Real-Time Arrival Information for Public Transit (page 60)
Brian Ferris, Kari Watkins, Alan Borning, University of Washington, USA

A Death in the Family: Opportunities for Designing Technologies for the Bereaved (page 60)

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

Passing On & Putting To Rest: Understanding Bereavement in the Context of Interactive Technologies (page 61)
William Odom, *Carnegie Mellon University, USA*
Richard Harper, Abigail Sellen, *Microsoft Research Cambridge, UK*
David Kirk, *University of Nottingham, UK*
Richard Banks, *Microsoft Research Cambridge, UK*

Fear and the City - Role of Mobile Services in Harnessing Safety and Security in Urban Use Contexts (page 61)
Jan Blom, *Nokia Research Center, Lausanne, Switzerland*
Divya Viswanathan, *Nokia Research Center, Bangalore, India*
Janet Go, Mirjana Spasojevic, *Nokia Research Center, Palo Alto, USA*
Karthikeya Acharya, Robert Ahonius, *Nokia Research Center, Bangalore, India*

The Prayer Companion: Openness and Specificity, Materiality and Spirituality (page 63)
William Gaver, *Goldsmiths, University of London, UK*
Mark Blythe, *University of York, UK*
Andy Boucher, *Goldsmiths, University of London, UK*
Nadine Jarvis, John Bowers, *Goldsmiths, University of London, UK*
Peter Wright, *Sheffield Hallam University, UK*

What's Your Idea? A Case Study of a Grassroots Innovation Pipeline within a Large Software Company (page 63)
Brian Bailey, Department of Computer Science, *University of Illinois and Microsoft Research, USA*
Eric Horvitz, *Microsoft Research, USA*

Knowing Where and When to Look in a Time-Critical Multimodal Dual Task (page 64)
Anthony J. Hornof, Yunfeng Zhang, Tim Halverson, *University of Oregon, USA*

Designing Patient-Centric Information Displays for Hospitals (page 64)
Lauren Wilcox, *Columbia University, USA*
Dan Morris, Desney Tan, *Microsoft Research, USA*
Justin Gatewood, *Washington Hospital Center, USA*

Designing a Technological Playground: A Field Study of the Emergence of Play in Household Messaging (page 71)
Siân E. Lindley, Richard Harper, Abigail Sellen, *Microsoft Research Cambridge, UK*

The Family Window: The Design and Evaluation of a Domestic Media Space (page 71)
Tejinder K. Judge, *Virginia Tech, USA*
Carman Neustaedter, Andrew F. Kurtz, *Kodak Research Labs, USA*

LensMouse: Augmenting the Mouse with an Interactive Touch Display (page 72)
Xing Dong Yang, University of Alberta, Canada
Edward Mak, David McCallum, Pourang Irani, *University of Manitoba, Canada*
Xiang Cao, Shahram Izadi, *Microsoft Research Cambridge, UK*

MouseLight: Bimanual Interaction on Digital Paper using a Pen and a Spatially-Aware Mobile Projector (page 72)
Hyunyoung Song, *University of Maryland, College Park, USA*
Francois Guimbretiere, *Cornell University, USA*
Tovi Grossman, George Fitzmaurice, *Autodesk Research, Canada*

The Design and Evaluation of an End-User-Deployable, Whole House, Contactless Power Consumption Sensor (page 73)
Shwetak N. Patel, Sidhant Gupta, *University of Washington, USA*
Matthew S. Reynolds, *Duke University, USA*

Code Bubbles: A Working Set-based Interface for Code Understanding and Maintenance (page 73)
Andrew Bragdon, Robert Zeleznik, Suman Karumuri, Steven P. Reiss, Joshua Kaplan, William Cheung, Christopher Coleman, Ferdi Adeputra, *Brown University, USA*
Joseph J. LaViola Jr., *University of Central Florida, USA*

Individual Models of Colour Differentiation to Improve Interpretability of Information Visualization (page 76)
David R. Flatla, Carl Gutwin, *University of Saskatchewan, Canada*

Intermediated Technology Use in Developing Communities (page 76)
Nithya Sambasivan, *University of California at Irvine, USA*
Ed Cutrell, *Microsoft Research India, India*
Kentaro Toyama, *University of California at Berkeley, USA*
Bonnie Nardi, *University of California at Irvine, USA*

CHI 2010 BEST NOTES, AWARDED BY SIGCHI

Note | A Longitudinal Study of How Highlighting Web Content Change Affects People's Web Interactions (page 46)
Jaime Teevan, Susan T. Dumais, Daniel J. Liebling, *Microsoft Research, USA*

Note | Social Network Activity and Social Well-Being (page 58)
Moira Burke, *Carnegie Mellon University, USA*
Cameron Marlow, Thomas Lento, *Facebook, USA*

CHI 2010 HONORABLE MENTION NOTES, AWARDED BY SIGCHI

Investigating Narrative Structure in Mobile Games for Seniors (page 35)
Sharon Lynn Chu Yew Yee, Henry Been-Lirn Duh, *National University of Singapore, Singapore*
Francis Quek, *Virginia Polytechnic Institute and State University, USA*

Fitting an Activity-Centric System into an Ecology of Workplace Tools (page 36)
Aruna Balakrishnan, *Carnegie Mellon University, USA*
Tara Matthews, Thomas Moran, *IBM Research USA*

Faster Progress Bars: Manipulating Perceived Duration with Visual Augmentations (page 51)
Chris Harrison, Zhiquan Yeo, Scott E. Hudson, *Human-Computer Interaction Institute, Carnegie Mellon University, USA*

Improving Social Game Engagement on Facebook through Enhanced Socio-Contextual Information (page 54)
Ben Kirman, Shaun Lawson, Conor Linehan, *University of Lincoln, UK*
Francesco Martino, Luciano Gamberini, *University of Padova, Italy*
Andrea Gaggioli, *Istituto Auxologico Italiano, Italy*

Minput: Enabling Interaction on Small Mobile Devices with High-Precision, Low-Cost, Multipoint Optical Tracking (page 57x)
Chris Harrison, Scott E. Hudson, *Human-Computer Interaction Institute, Carnegie Mellon University, USA*

PRECONFERENCE WORKSHOPS

W1 | BELIV'10 - Beyond time and Errors: novel evaLuation methods for Information Visualization

Enrico Bertini, *University of Fribourg, Switzerland*
Heidi Lam, *Google Inc., USA*
Adam Perer, *IBM Haifa Research Lab, Israel*

W2 | Whole Body Interaction 2010

David England, *Liverpool John Moores University, UK*
Jennifer Sheridan, *London Knowledge Lab, UK*
Beth Crane, *University of Michigan, USA*

W3 | Bridging the Gap: Moving From Contextual Analysis to Design

Tejinder Judge, *Virginia Tech, USA*
Carman Neustaedter, *Kodak Research Labs, USA*
Anthony Tang, *University of British Columbia, Canada*
Steve Harrison, *Virginia Tech, USA*

W4 | Context-Adaptive Interaction for Collaborative Work

Jürgen Ziegler, *University of Duisburg-Essen, Germany*
Jörg Haake, *Fern Universität in Hagen, Germany*
Stephan Lukosch, *Delft University of Technology, the Netherlands*
Volkmar Pipek, *University of Siegen, Germany*

W5 | Critical Dialogue: Interaction, Experience and Cultural Theory

Mark Blythe, *University of York, UK*John McCarthy, *University College Cork, UK*
Ann Light, *Sheffield Hallam University, UK*
Shaowen Bardzell, *Indiana University, USA*
Peter Wright, *Sheffield Hallam University, UK*
Jeffrey Bardzell, *Indiana University, USA*
Alan Blackwell, *University of Cambridge, UK*

W6 | Design to read: Designing for people who do not read easily

Caroline Jarrett, *Effortmark Ltd, UK*
Helen Petrie, *University of York, UK*
Kathryn Summers, *University of Baltimore, USA*

W7 | HCI at the End of Life: Understanding Death, Dying, and the Digital

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

W8 | Know Thyself: Monitoring and Reflecting on Facets of One's Life

Ian Li, Jodi Forlizzi, Anind Dey, *Carnegie Mellon University, USA*

W9 | Model-Driven Development of Advanced User Interfaces

Jan Van den Bergh, *Hasselt University - IBBT, Belgium*
Gerrit Meixner, *DFKI, Germany*
Kai Breiner, *University of Kaiserslautern, Germany*
Andreas Pleuss, *Lero, Ireland*
Stefan Sauer, *University of Paderborn, Germany*
Heinrich Hussmann, *University of Munich, Germany*

W10 | Models, theories and methods of studying online behavior

Barry Brown, *University of California, San Diego, USA*
Cliff Lampe, *Michigan State University, USA*
Kerry Rodden, *Google, USA*
Nicolas Ducheneaut, *Palo Alto Research Center, USA*

W11 | Natural User Interfaces: the prospect and challenge of touch and gestural computing

Dennis Wixon, Steven Seow, Andy Wilson, *Microsoft Corporation, USA*
Ann Morrison, Giulio Jacucci, *Helsinki Institute for Information Technology, Finland*

W12 | Senior-Friendly Technologies: Interaction Design for the Elderly

Henry Been-Lirn Duh, *Interactive and Digital Media Institute National University of Singapore, Singapore*
Ellen Yi-Luen Do, *GVU center College of Architecture & School of Interactive Computing Gerogia Institute of Technology, USA*
Mark Billinghurst, *HIT Lab New Zealand University of Canterbury, New Zealand*
Francis Quek, *Center for Human-Computer Interaction and Department of Computer Science Virginia Tech, USA*
Vivian Hsueh-Hua Chen, *Wee Kim Wee School of Communication and Information Nanyang Technological University, Singapore*

W13 | Video Games as Research Instruments

Eduardo Calvillo Gamez, *Universidad Politecnica de San Luis Potosi, Mexico*
Jeremy Gow, *Imperial College London, UK*
Paul Cairns, *University of York, UK*
Jonathan Back, Eddie Capstick, *University College London, UK*

W14 | Wellness Informatics: Towards a Definition and Grand Challenges

Rebecca E. Grinter, *School of Interactive Computing, Georgia Institute of Technology, USA*
Katie A. Siek, *Department of Computer Science, University of Colorado at Boulder, USA*
Andrea Grimes, *School of Interactive Computing, Georgia Institute of Technology, USA*

W15 | Artifacts in Design: Representation, Ideation, and Process

D. Scott McCrickard, *Virginia Tech, USA*
Michael E. Atwood, *Drexel University, USA*
Gayle Curtis, *Stanford University, USA*
Steve Harrison, *Virginia Tech, USA*
Jon Kolko, *frog design, USA*
Erik Stolterman, *Indiana University at Bloomington, USA*
Shahtab Wahid, *Virginia Tech, USA*

W16 | Brain, Body and Bytes: Psychophysiological User Interaction
Audrey Girouard, Erin Treacy Solovey, *Tufts University, USA*
Regan Mandryk, *University of Saskatchewan, Canada*

W17 | Cognitive Models of User Behavior in Social Information Systems
Wai-Tat Fu, *University of Illinois at Urbana-Champaign, USA*
Thomas Kannampallil, *Penn State University, USA*
Desney Tan, *Microsoft Research, USA*
Lennart Nacke, *Blekinge Institute of Technology, Sweden*
Robert J.K. Jacob, *Tufts University, USA*

W18 | Designing and Evaluating Affective Aspects of Sociable Media to Support Social Connectedness
Thomas Visser, *Delft University of Technology, the Netherlands*
Daan van Bel, *Eindhoven University of Technology, the Netherlands*
Pavan Dadlani, *Philips Research, the Netherlands*
Svetlana Yarosh, *Georgia Institute of Technology, USA*

W19 | SkCHI: Designing Sketch Recognition Interfaces
Tracy Hammond, *Texas A&M University, USA*
Edward Lank, *University of Waterloo, Canada*
Aaron Adler, *BBN, USA*

W20 | Examining Appropriation, Re-use, and Maintenance for Sustainability
Jina Huh, *University of Michigan, USA*
Eli Blevis, *Indiana University, USA*
Bill Tomlinson, *University of California, Irvine, USA*
Phoebe Sengers, *Cornell University, USA*
Lisa P. Nathan, *University of British Columbia, Canada*
Daniela Busse, *SAP Labs, Inc, USA*
Six Silberman, *University of California, Irvine, USA*

W21 | Microblogging: What and How Can We Learn From It?
Julia Grace, *IBM Almaden Research, USA*
Dejin Zhao, *Information Sciences & Technology Pennsylvania State University, USA*
danah boyd, *Microsoft Research New England, USA*

W22 | Next Generation of HCI and Education: Workshop on UI Technologies and Educational Pedagogy
Edward Tse, *SMART Technologies, Canada*
Johannes Schöning, *DFKI GmbH, Germany*
Yvonne Rogers, *The Open University, UK*
Chia Shen, *SDR Lab, USA*
Gerald Morrison, *SMART Technologies, Canada*

W23 | Researcher-Practitioner Interaction
Elizabeth Buie, *Luminanze Consulting, LLC, USA*
Susan Dray, *Dray & Associates, Inc., USA*
Keith Instone, *IBM, USA*
Jhilmil Jain, *HP, USA*
Gitte Lindgaard, *Carleton University, Canada*
Arnie Lund, *Microsoft, USA*

W24 | The Future of FLOSS in CHI Research and Practice
Paula M. Bach, *The Pennsylvania State University, USA*
Michael Terry, *University of Waterloo, Canada*

Monday

= 15 minutes = 30 minutes = unscheduled time

	8:30–10:00	10:00–10:30	11:30–13:00	14:30–16:00	16:30–18:00
Centennial 1	**Opening Plenary** **Genevieve Bell** Messy Futures: Culture, Technology and Research Page 24	**CHI Madness** Page 24	**Papers** Organizations & Communities Page 24	**Papers** Games and Players Page 27	**Papers** Dance, Dust, and Drama: Designing Design Page 30
Centennial 2			**Panel** Addressing Challenges in International Field Research Page 24	**Paper+Panel** The Infrastructure Problem in HCI Page 27	**Panel** What Makes a Good Critic? Page 30
Centennial 3			**Papers/Notes** Multitasking Page 24	**Papers/Notes/Case Studies** Language 2.0 Page 27	**Papers** Computing on the Body Page 30
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Commons/Grand Hall	Special Events
Conference Reception & Exhibits Grand Opening 18:30–21:00 **Media Showcase Interactivity Demos** 18:30–21:00 **Additional Interactivity Demo in** Hanover A	**Media Showcase Performance** 11:30–13:00 Hanover A **Media Showcase Performance** 18:30–21:00 Commons

Notes

■ CHI MADNESS | CENTENNIAL 2

10:00-10:30

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

Confused about what to do next? Too many options for you to choose from? We end this session with CHI Madness. CHI Madness, now in its fifth year, returns to give everyone a lightning speed overview of the day's program. In 25 seconds or less the presenters in many of today's sessions will tell you what's exciting about their presentation. It's fast-paced; it's fun; sometimes it's even funny.

■ OPENING PLENARY – CENTENNIAL 1-3

MESSY FUTURES: CULTURE, TECHNOLOGY AND RESEARCH

Genevieve Bell, PhD
Intel Corporation
Intel Fellow, Digital Home Group
Director, User Experience Group

In 1998, Americans represented nearly three-quarters of the world's internet users, today, they are less than 15%. The complexion of the web – its users, their desires, their languages, points of entry and experiences – has subtly and not so subtly changed over that period. All these new online participants bring with them potential different conceptual models of information, knowledge and knowledge systems with profound consequences for the ideological basis of the net. These new participants also operate within different regulatory and legislative regimes which will bring markedly different ideas about how to shape what happens online. And in this same time period, the internet itself has become feral, appearing as a data source, connectivity backbone or content stream for mobile devices, cell phones, connected consumer electronics, gaming consoles, personal health devices, smart electrical meters and city-scapes. Devices have proliferated with device ensembles and debris collecting in the bottom of backpacks, on the dashboards of dusty trucks and in drawers, cabinets and baskets. Convergence didn't really happen the way it was anticipated and not everyone got online, got connected or having been connected, stayed connected. And the paperless office and the cashless society, well they ran up against the stubborn materiality of paper in its many guises, and e-government proved even more complicated than just regular government. And that was just the last ten years.

Over the next decade, the technologies, systems and experiences we imagine, build, critique and resist will have even more complex trajectories. They will circulate in even wider networks – of people, institutions, cultures, places, memories and ideologies. If we start with the premise of "messy futures," what does that means for us as a community of scholars, researchers and builders? What will it mean for the projects we undertake, their locations, intellectual agendas and outputs? . In this talk, I want to explore about what happens if we accept that the future is neither singular, nor stable.

Born and raised in Australia, today Dr. Genevieve Bell is the Director of the User Experience Group within Intel Corporation's Digital Home Group in Portland, Oregon. She is the driving force behind Intel's emerging consumer centred focus. Gathering a team of anthropologists, interaction designers and human factors engineers to transform consumer-centric product innovation, she has fundamentally changed how Intel envisions, plans and develops its platforms. Her team is responsible for setting research directions, conducting global comparative qualitative and quantitative research, leading new product strategy and definition and championing consumer-centric innovation and thinking in Intel's Consumer Electronics business and across all of Intel's platforms. Dr. Bell has a PhD in anthropology from Stanford University and a new book forthcoming from MIT Press. She was recently recognized by Fast Company magazine as one of the 100 most innovative people in business.

■ PAPERS | CENTENNIAL 1

ORGANIZATIONS AND COMMUNITIES

SESSION CHAIR: Amy Bruckman, *Georgia Tech*

PAPER | Across Boundaries of Influence and Accountability: The Multiple Scales of Public Sector Information Systems

Christopher A. Le Dantec, W. Keith Edwards, *Georgia Institute of Technology, USA*

We present findings from a year-long ethnographic investigation of ICT use within nonprofit agencies. Our work demonstrates the unique challenges facing systems used across different scales of influence and accountability.

PAPER | A Case Study of Micro-blogging in the Enterprise: Use, Value, and Related Issues

Jun Zhang, *Pitney Bowes, USA*
Yan Qu, *University of Maryland, USA*
Jane Cody, Yuling Wu, *Pitney Bowes, USA*

Case study of Yammer use in a large corporate environment using rich empirical data. Provided comprehensive understanding of use, value and limitations of micro-blogging in the enterprise.

PAPER | Student Socialization in the Age of Facebook

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

Presents a study of student use of Facebook for offline socialization, comparing mobile, semi-mobile and non-mobile use of Facebook.

■ PANEL | CENTENNIAL 2

ADDRESSING CHALLENGES IN DOING INTERNATIONAL FIELD RESEARCH

PANELISTS:
Elizabeth Churchill, *Yahoo! Research, USA*
Susan Dray, *Dray & Associates, Inc., USA*
Ame Elliott, *IDEO, USA*
Patrick Larvie, *Google, USA*
David Siegel, *Dray & Associates, Inc., USA*

Panel discussing some key challenges in international field research. Will help attendees better understand and avoid pitfalls and manage challenges.

■ PAPERS/NOTES | CENTENNIAL 3

MULTITASKING

SESSION CHAIR: Mary Czerwinski, *Microsoft Research*

NOTE | Multitasking and Monotasking: The Effects of Mental Workload on Deferred Task Interruptions

Dario D. Salvucci, Peter Bogunovich, *Drexel University, USA*

Describes an experiment investigating whether users defer interruptions to points of lower workload. Augments our understanding of how users manage interruptions in multitask environments.

NOTE | On Reconstruction of Task Context after Interruption

Dario D. Salvucci, *Drexel University, USA*

Provides a theoretical analysis of the process by which users reconstruct task knowledge after an interruption. Augments our understanding of how users recover from interruptions in multitask environments.

PAPER | Evaluating Cues for Resuming Interrupted Programming Tasks

Chris Parnin, *Georgia Institute of Technology, USA*
Robert DeLine, *Microsoft Research, USA*

Survey and experiment evaluating written notes and visual cues as resumption aids for interrupted programming tasks. Can inform designers in facilitating developer communication with teammembers and enhance note-taking.

PAPER | Multitasking Bar: Prototype and Evaluation of Introducing the Task Concept into a Browser

Qing Wang, Huiyou Chang, *Sun Yat-Sen University, China*

Describes a browser plugin for helping users in their multitasking while working on the Web. It helps users to manage Web pages related to a task as a whole bundle.

■ PAPERS | CENTENNIAL 4

EXPLORATORY SEARCH

SESSION CHAIR: Gene Golovchinsky, *FXPAL*

PAPER | Reactive Information Foraging for Evolving Goals

Joseph Lawrance, *Oregon State University & Massachusetts Institute of Technology, USA*
Margaret Burnett, *Oregon State University, USA*
Rachel Bellamy, *IBM Research, USA*
Christopher Bogart, *Oregon State University, USA*
Calvin Swart, *IBM Research, USA*

We present PFIS2, a reactive model of information foraging in which the goals change. A seven-month field study demonstrated that the model predicted remarkably well where programmers navigated.

PAPER | How Does Search Behavior Change as Search Becomes More Difficult?

Anne Aula, Rehan M. Khan, Zhiwei Guan, *Google, USA*

Lab and online study (200+ users) showed that behavioral signals available in search logs can distinguish users engaged in hard and easy tasks.

PAPER | Effects of Popularity and Quality on the Usage of Query Suggestions During Information Search

Diane Kelly, Amber Cushing, Maureen Dostert, Xi Niu, Karl Gyllstrom, *University of North Carolina, USA*

Experiment shows that people can distinguish between the query suggestion quality and are not influenced by past usage. Useful to those interested in designing social search systems and understanding behavior.

■ **PAPERS | REGENCY 5**

SOCIAL SUPPORT FOR CANCER PATIENTS

SESSION CHAIR: Mark Newman, *University of Michigan*

PAPER | Catalyzing Social Support for Breast Cancer Patients

Meredith M. Skeels, Kenton T. Unruh, Christopher Powell, Wanda Pratt, *University of Washington, USA*

Social support is a critical yet underutilized resource for cancer patients. We collaborated with breast cancer patients on the design of social networking software to catalyze and support helping activities.

PAPER | Transforming Clinic Environments into Information Workspaces for Patients

Kenton T. Unruh, Meredith M. Skeels, Andrea Civan-Hartzler, Wanda Pratt, *University of Washington, USA*

This paper describes how breast cancer patients try to manage information in clinical settings constrained by lack of advance information, awkward physical positions, fragmented attention, and heightened stress.

PAPER | Blowing in the Wind: Unanchored Patient Information Work During Cancer Care

Predrag Klasnja, *University of Washington & Intel, USA*
Andrea Civan Hartzler, Kent T. Unruh, Wanda Pratt, *University of Washington, USA*

We report on information management activities of breast cancer patients done without adequate resources—e.g., while mobile or experiencing side-effects. We suggest ways to support these activities with mobile technology.

■ **PAPERS | REGENCY 6**

PRIVACY AWARENESS AND ATTITUDES

SESSION CHAIR: Carman Neustaedter, *Kodak*

PAPER | Independence and Interaction: Understanding Seniors' Privacy and Awareness Needs For Aging in Place

Jeremy Birnholtz, *Cornell University, USA & University of Toronto, Canada*
McKenzie Jones-Rounds, *Cornell University, USA*

Designing for aging in place brings new twists to classic tensions between privacy and awareness. Interviews show that seniors mitigate these tensions via physical environments, temporal structures, and technology mediation.

PAPER | ContraVision: Exploring Users' Reactions to Futuristic Technology

Clara Mancini, Yvonne Rogers, Arosha K. Bandara, *The Open University, UK*
Tony Coe, *Two Cats Can, UK*
Lukasz Jedrzejczyk, *The Open University, UK*
Adam N. Joinson, *University of Bath, UK*
Blaine A. Price, Keerthi Thomas, *The Open University, UK*
Bashar Nuseibeh, *The Open University, UK & University of Limerick, UK*

Study illustrating a narrative method to represent futuristic technology. Can help designers elicit a wider spectrum of users' reactions and uncover more facets of the responses that technology might encounter.

PAPER | I Don't Mind Being Logged, but Want to Remain in Control: A Field Study of Mobile Activity and Context Logging

Tuula Kärkkäinen, *Tampere University of Technology, Finland*
Tuomas Vaittinen, *Nokia Research Center, Finland*
Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, & Nokia Research Center, Finland*

We describe a UX study of a lifelogging system based on continuous mobile phone activity logging. The results can assist designers in understanding the user needs related to lifelogging systems.

■ **PAPERS | REGENCY 7**

VISUALIZATION

SESSION CHAIR: Polle Zellweger, *University of Washington*

PAPER | Crowdsourcing Graphical Perception: Using Mechanical Turk to Assess Visualization Design

Jeffrey Heer, Michael Bostock, *Stanford University, USA*

Describes a series of experiments investigating the use of Mechanical Turk to conduct visual perception research. Contributes new insights for both visualization design and crowdsourced user studies.

PAPER | ManyNets: An Interface for Multiple Network Analysis and Visualization

Manuel Freire Morán, Universidad Autónoma de Madrid, Spain
Catherine Plaisant, Ben Shneiderman, Jen Golbeck, *University of Maryland, USA*

ManyNets allows analysts to visualize, rank, and filter thousands of networks. A tabular visualization enhanced with column summaries displays default and user-defined attributes. Trust network analysis is used as example.

PAPER | A Comparative Evaluation on Tree Visualization Methods for Hierarchical Structures with Large Fan-outs

Hyunjoo Song, Bohyung Kim, *Seoul National University, Korea*
Bongshin Lee, *Microsoft Research, USA*
Jinwook Seo, *Seoul National University, Korea*

This paper presents two extensions to the conventional node-link tree visualization. We compared them against the conventional tree visualization to see the advantages of the multi-column interface.

■ **PAPERS | HANOVER CDE**

MAKING MEANING IN LARGE DISPLAYS

SESSION CHAIR: Niklas Elmqvist, *Purdue University*

PAPER | Space to Think: Large, High-Resolution Displays for Sensemaking

Christopher Andrews, Alex Endert, Chris North, *Virginia Polytechnic Institute and State University, USA*

Our studies show that large, high-resolution displays create a spatial environment which can support the sensemaking process through memory externalization and an integrated semantic layer based on spatial relationships.

PAPER | Effects of Interior Bezels of Tiled-Monitor Large Displays on Visual Search, Tunnel Steering, and Target Selection

Xiaojun Bi, Seok-Hyung Bae, Ravin Balakrishnan, *University of Toronto, Canada*

Study effects of interior bezels of tiled-monitor large displays on visual search, tunnel steering, and target selection, and suggest guidelines of tiled-monitor display usage as well as user interfaces design.

PAPER | Let's Go From the Whiteboard: Supporting Transitions in Work Through Whiteboard Capture and Reuse

Stacy Branham, *Virginia Tech, USA*
Gene Golovchinsky, Scott Carter, Jacob Biehl, *FX Palo Alto Laboratory, Inc., USA*

We describe the use of ReBoard, a system for capturing and reusing whiteboard content. Through a longitudinal deployment we document several new workflows, including sharing, remote access, and reuse.

■ **PAPERS/NOTE | HANOVER FG**

EPIC #FAIL

SESSION CHAIR: Janet C. Read, *University of Central Lancashire*

NOTE | Estimating Residual Error Rate in Recognized Handwritten Documents Using Artificial Error Injection

Edward Lank, Ryan Stedman, Michael Terry, *University of Waterloo, Canada*

Describes the use of artificial errors to callibrate human performance when verifying handwriting recognition. Demonstrates that human performance on artificial errors and recognition errors is similar.

PAPER | Predicting the Cost of Error Correction in Character-Based Text Entry Technologies

Ahmed S. Arif, Wolfgang Stuerzlinger, *York University, Canada*

This article presents and verifies a new "error correction cost" model for character-based text entry technologies. It differentiates between human and system factors and enhances evaluation, comparison, and prediction.

PAPER | SHRIMP - Solving Collision and Out of Vocabulary Problems in Mobile Predictive Input with Motion Gesture

Jingtao Wang, *University of California at Berkeley, USA*
Shumin Zhai, *IBM Almaden Research Center, USA*
John Canny, *University of California at Berkeley, USA*

Describes an effective mobile text entry system for camera phones. It maintains the speed advantage of dictionary driven input while overcoming the collision and OOV problems without mode switching.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

CURRENT ISSUES IN ASSESSING AND IMPROVING INFORMATION USABILITY

ORGANIZERS:
Stephanie Rosenbaum, *Tec-Ed, Inc., USA*
Judith Ramey, *University of Washington, USA*
Janice Redish, *Redish & Associates, Inc., USA*

■ PAPERS | CENTENNIAL 1

GAMES AND PLAYERS

SESSION CHAIR: Giulio Jacucci, *Helsinki Institute for Information Technology*

PAPER | The Rogue in the Lovely Black Dress: Intimacy in World of Warcraft

Tyler Pace, Shaowen Bardzell, Jeffrey Bardzell, *Indiana University, USA*

This paper contributes to the theorization of online intimacy through a critical analysis of 62 player accounts of intimate events in World of Warcraft. Four intimacy themes are explored.

PAPER | Physical Activity Motivating Games: Virtual Rewards for Real Activity

Shlomo Berkovsky, Mac Coombe, Jill Freyne, Dipak Bhandari, Nilufar Baghaei, *CSIRO, Australia*

We present and evaluate a novel design that leverages engagement with computer games to motivate players to perform physical activity while playing: players gain virtual rewards for real activity performed.

PAPER | Understanding and Evaluating Cooperative Games

Magy Seif El-Nasr, Bardia Aghabeigi, Mona Erfani, David Milam, Beth Lameman, *Simon Fraser University, Canada*
Hamid Maygoli, *New Media Research and Education, Canada*
Sang Mah, *Bardel Entertainment, Canada*

To enhance next generation cooperative games, we present a validated Cooperative Performance Metrics (CPMs) and results of a study using the CPMs to analyze four cooperative games for kids.

■ PAPER + PANEL | CENTENNIAL 2

THE INFRASTRUCTURE PROBLEM IN HCI

SESSION CHAIR:
Dan Olsen, *Brigham Young University*

PAPER | The Infrastructure Problem in HC

Keith Edwards, *Georgia Tech, USA*
Mark W. Newman, *University of Michigan, USA*
Erika S. Poole, *Georgia Tech, USA*

HCI limits its impact by addressing infrastructure only superficially. We illustrate cases where infrastructure choices impact user experience and provide a framework for seeking a solution.

PANELISTS:
Mark Ackerman, *University of Michigan*
Paula Bach, *The Pennsylvania State University*
Steve Jackson, *University of Michigan*
Gregory Abowd, *Georgia Tech*

■ PAPER/NOTES/CASE STUDY | CENTENNIAL 3

LANGUAGE 2.0

SESSION CHAIR: Sara Kiesler, *Carnegie Mellon University*

Note | An Unobtrusive Behavioral Model of "Gross National Happiness"

Adam D. I. Kramer, *University of Oregon, USA*

This work uses well-established HCI methods, taken in an unobtrusive manner, creates an aggregate metric out of Facebook users' updates, scales the metric to a national level, and publishes it.

Paper | The Tower of Babel Meets Web 2.0: User-Generated Content and its Applications in a Multilingual Context

Brent Hecht, Darren Gergle, *Northwestern University, USA*

We explore language's fragmenting effect on user-generated content by examining the knowledge diversity present in 25 Wikipedia language editions. Large differences between language editions are found, and implications are discussed.

Note | Indexicality of Language and the Art of Creating Treasures

Matti Rantanen, *Aalto University, Finland*

This paper describes a creative way of using language in a location-based treasure hunt game called geocaching.

Case Study | Visualizing Language Use in Team Conversations: Designing Through Theory, Experiments, and Iterations

Gilly Leshed, Dan Cosley, Jeffrey T. Hancock, Geri Gay, *Cornell University, USA*

Presents challenges in designing GroupMeter, visualizing aspects of language use in team conversations. Discusses potential answers and lessons for collaboration-enhancing systems through theory, a series of prototypes, and experiments.

■ PAPERS | CENTENNIAL 4

MOBILE DEVICE INTERACTION

SESSION CHAIR: Matt Jones, *University of Swansea*

PAPER | CrossTrainer: Testing the Use of Multimodal Interfaces in Situ

Eve Hoggan, Stephen Brewster, *University of Glasgow, UK*

We present an 8-day study of CrossTrainer: a mobile game using crossmodal audio/tactile feedback focussing on the longitudinal effects of such feedback, the impact of location, and personal modality preference.

PAPER | Newport: Enabling Sharing During Mobile Calls

Junius Gunaratne, *University of California, Irvine, USA*
A.J. Brush, *Microsoft Research, USA*

Newport is a collaborative application for sharing context (e.g. location) and content (e.g. photos and notes) during mobile phone calls. This research examines the use of mobile device sharing technology.

PAPER | Attractive Phones Don't Have To Work Better: Independent Effects of Attractiveness, Effectiveness, and Efficiency on Perceived Usability

Jeffrey M. Quinn, Tuan Q. Tran, *Sprint Nextel, USA*

Quantitative results from lab-based usability testing showing that product attractiveness and task performance effectiveness and efficiency all influence participant ratings of usability. Sheds light on how to interpret usability ratings.

■ **PAPERS | REGENCY 5**

THE AGE OF SEARCHING

SESSION CHAIR: Anthony Hornof, *University of Oregon*

PAPER | Exploiting Knowledge-in-the-head and Knowledge-in-the-social-web: Effects of Domain Expertise on Exploratory Search in Individual and Social Search Environments

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

Our study demonstrated that domain expertise is still important in guiding users to the right information: Experts are better at interpreting social tags and generating keywords in social search systems.

PAPER | Interactive Effects of Age and Interface Differences on Search Strategies and Performance

Jessie Chin, Wai-Tat Fu, *University of Illinois at Urbana Champaign, USA*

We show that older adults utilize stable search strategies across interfaces and tasks because of their better background medical knowledge that facilitates fluent transformation between internal concepts and external links.

PAPER | Children's Roles Using Keyword Search Interfaces at Home

Allison Druin, Elizabeth Foss, *University of Maryland, USA*
Hilary Hutchinson, *Google, USA*
Leshell Hatley, Evan Golub, *University of Maryland, USA*

Describes seven roles children display while searching the Internet and suggests search interface design directions, based on a study of 83 children ages 7, 9, and 11.

■ **PAPERS | REGENCY 6**

PRIVACY BEHAVIORS

SESSION CHAIR: John Karat, *IBM*

PAPER | Using Reinforcement to Strengthen Users' Secure Behaviors

Ricardo Villamarin Salomon, Jose Brustoloni, *University of Pittsburgh, USA*

Introduces Security-Reinforcing Applications (SRAs) and Vicarious Security Reinforcement (VSR), two techniques to improve users' security decisions. User studies show that SRAs are effective and that VSR accelerates learning SRA's benefits

PAPER | Who Falls for Phish? A Demographic Analysis of Phishing Susceptibility and Effectiveness of Interventions

Steve Sheng, Mandy Holbrook, *Carnegie Mellon University, USA*
Ponnurangam Kumaraguru, *Indraprastha Institute of Information Technology , India*
Lorrie Cranor, Julie Downs, *Carnegie Mellon University, USA*

Online survey to study the relationship between demographics and phishing susceptibility, and the effectiveness of several anti-phishing educational materials. Identifies vulnerable groups and finds education reduces susceptibility significantly.

PAPER | The True Cost of Unusable Password Policies: Password Use in the Wild

Philip Inglesant, M. Angela Sasse, *University College London, UK*

Current password policies are unusable. They antagonise users, reduce their productivity, and trigger coping strategies that undermine security. Organisations need to devise more flexible approaches appropriate to the real threats.

■ **PAPERS/NOTE | REGENCY 7**

INTERFACES AND VISUALIZATION

SESSION CHAIR: Patrick Baudisch, *Hasso Plattner Institute*

PAPER | Occlusion-Aware Interfaces

Daniel Vogel, *University of Toronto & Mount Allison University, Canada*
Ravin Balakrishnan, *University of Toronto, Canada*

Describes an interaction technique to reduce the effect of hand occlusion with pen input using image processing and a configurable occlusion model. Can assist researchers in designing other occlusion-aware techniques.

PAPER | High-Precision Magnification Lenses

Caroline Appert, Olivier Chapuis, *LRI - Université Paris-Sud et CNRS, INRIA, France*
Emmanuel Pietriga, *INRIA, LRI - Université Paris-Sud et CNRS France*

Presents and evaluates new magnification lenses that allow both fast navigation and high-precision by addressing the mismatch between visual space and motor space in the magnified region.

NOTE | Quasi-Qwerty Soft Keyboard Optimization

Xiaojun Bi, *University of Toronto, Canada & IBM Research - Almaden, USA*
Barton Smith, Shumin Zhai, *IBM Research - Almaden, USA*

By moving letters at most one key away from original positions on Qwerty, Quasi-Qwerty reduces novice user's visual search time over freely optimized layout and improves inputting speed over Qwerty.

■ **PAPERS/NOTES | HANOVER CDE**

MARKET MODELS FOR Q&A SERVICES

SESSION CHAIR: Michael Atwood, *Drexel University*

PAPER | Why Pay?: Exploring How Financial Incentives are Used for Question & Answer

Gary Hsieh, Robert Kraut, Scott Hudson, *Carnegie Mellon University, USA*

Analysis of how financial incentives affect question asking, answer giving and knowledge search. Can assist participants and designers in using financial incentives on question and answer sites.

PAPER | Hidden Markets: UI Design for a P2P Backup Application

Sven Seuken, *Harvard University, USA*
Kamal Jain, Desney S. Tan, Mary Czerwinski, *Microsoft Research, USA*

Introduces a new paradigm called "Hidden Markets" for designing market user interfaces. Explores the paradigm using a P2P backup application and presents the results from a formative usability study.

NOTE | Re-examining Price as a Predictor of Answer Quality in an Online Q&A Site

Grace YoungJoo Jeon, Yong-Mi Kim, Yan Chen, *University of Michigan, USA*

Re-analyzes data from previous Google Answers studies by applying Heckman analysis to resolve selection bias from non-randomly missing data. Offers new explanation for role of price in a Q&A site.

NOTE | Why User of Yahoo! Answers Do Not Answer Questions

David Dearman, Khai N. Truong, *University of Toronto, Canada*

We provide insights into why members of the Yahoo! Answers community choose to not answer the questions they have read.

■ **CASE STUDIES | HANOVER FG**

CALL CENTERS

SESSION CHAIR: Andrew J. Ko, *University of Washington*

CASE STUDY | Ontology Models for Interaction Design: Case Study of Online Support

Keith Butler, *University of Washington, USA*
Jia Zhang, *University of Texas, USA*
Anne Hunt, Beth Huffer, *USA*
John Muehleisen, *Microsoft, USA*

CASE STUDY | The Fulfillment of User Needs and the Course of Time in Field Investigation

Claudia Nass, Daniel Kerkow, Jessica Jung, *Fraunhofer Institute for Experimental Software Engineering, Germany*

We present a study realized in a call-center aimed at balancing business and users' goals in order to enhance user experience and hence positively influence the call agents' emotional state.

CASE STUDY | Using "Rapid Experimentation" to Inform Customer Service Experience Design

Soni Meckem, *Cisco Systems, Inc., USA*
Jennifer Lee. Carlson, *Tec-Ed, Inc., USA*

Cisco used "Rapid Experimentation" methodology for iterative, high-velocity studies in a global customer service experience design project, achieving design goals in 8 weeks, 4 ahead of the planned 12-week schedule.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

UNDERSTANDING "COOL"

ORGANIZERS:
Karen Holtzblatt, David Rondeau, *InContext Design, USA*
Les Holtzblatt, *The MITRE Corporation, USA*

■ PAPERS | CENTENNIAL 1

DANCE, DUST, AND DRAMA: DESIGNING DESIGN

SESSION CHAIR: Jodi Forlizzi, *Carnegie Mellon University*

PAPER | Hand in Hand with the Material: Designing for Suppleness

Petra Sundström, Kristina Höök, *Stockholm University, Sweden*

Describes the complexity in designing for a supple interaction, involving users bodily and emotionally into a 'dance' with a system. Here with a special focus on material properties.

PAPER | The Case of the Disappearing Ox: Seeing Through Digital Images to an Analysis of Ancient Texts

Grace de la Flor, *University of Oxford, UK*
Paul Luff, *King's College , UK*
Marina Jirotka, Ruth Kirkham, John Pybus, Annamaria Carusi, *University of Oxford, UK*

Drawing upon a video-based study of how classicists interpret fragmented and indistinct texts we discuss the consequences for systems designed to support research including image processing technologies and visualization techniques.

PAPER | The Implications of Improvisational Acting and Role-Playing on Design Methodologies

Ben Medler, Brian Magerko, *Georgia Institute of Technology, USA*

Describes how improvisational theatre and role-playing performance techniques work, how they have been used by designers and where the techniques differentiate from one another.

■ PANEL | CENTENNIAL 2

WHAT MAKES A GOOD DESIGN CRITIC? FOOD DESIGN VS. PRODUCT DESIGN CRITICISM

PANELISTS:
Patañjali Venkatacharya, *Oracle USA, Inc. and Patañjali's Kitchen LLC, USA*
Jonathan Kessler, *Food Critic & Writer, USA*
Tami Hardeman, *Food Stylist, USA*
Ed Seiber, *Seiber Design, Inc., USA*
Bill Buxton, *Microsoft Research, USA*

Explorations of the intersection between food design and product design. Multi-disciplinary designers will contrast methods used for critiquing end-to-end experiences, including the spaces in which these experiences are consumed.

■ PAPERS | CENTENNIAL 3

COMPUTING ON THE BODY

SESSION CHAIR: Jeffrey Bardzell, *Indiana University-Bloomington*

PAPER | BuzzWear: Alert perception in Wearable Tactile Displays on the Wrist

Seungyon Claire Lee, Thad Starner, *Georgia Institute of Technology, USA*

Presents the design of 2-dimensional wearable tactile displays on the wrist and the evaluation performed with visual distraction. Guides the design of eyes-free wearable alert systems to support mobile interaction.

PAPER | i*CATch: A Scalable, Plug-n-Play Wearable Computing Framework for Novices and Children

Grace Ngai, Stephen C.F. Chan, Vincent T.Y. Ng, Joey C.Y. Cheung, Sam S.S. Choy, Winnie W.Y. Lau, Jason T.P. Tse, *Hong Kong Polytechnic University, Hong Kong*

This paper presents i*CATch, a modular framework consisting of controllers, sensors, actuators, a bus, and a graphical programming language. It enables novices and children to create innovative applications with wearable computers quickly.

PAPER | Skinput: Appropriating the Body as an Input Surface

Chris Harrison, *Carnegie Mellon University, USA*
Desney Tan, Dan Morris, *Microsoft Research, USA*

Skinput is a technology that appropriates the human body for acoustic transmission, allowing the skin to be used as a finger input surface.

■ PAPERS/NOTES | CENTENNIAL 4

ORGANIZING AND ORGANIZATIONS

SESSION CHAIR: Arnie Lund, *Microsoft*

PAPER | Timeline Collaboration

Morten Bohøj, *University of Aarhus and Alexandra Institute, Denmark*
Nikolaj Gandrup Borchorst, Niels Olof Bouvin, Susanne Bødker, Par-Ola Zander, *University of Aarhus, Denmark*

Employing an example this paper presents timeline interaction across groups of citizens and municipal workers. The contribution of the paper regards development of interaction techniques when collaboration happens over time.

NOTE | Informal Interactions in Nonprofit Networks

Jennifer Stoll, W. Keith Edwards, Elizabeth D. Mynatt, *Georgia Institute of Technology, USA*

Informal interactions within interorganizational networks are not well understood or supported. Findings from our field study point to a need for tools/systems to better facilitate complex ad hoc interorganizational activities.

PAPER | Managing Nomadic Knowledge: A Case Study of the European Social Forum

Saqib Saeed, Volkmar Pipek, Markus Rohde, Volker Wulf, *University of Siegen, Germany*

The paper portrays a concept of "Nomadic Knowledge" based on an empirical case study. It highlights knowledge sharing practices and provides directions for technical support in managing nomadic knowledge.

■ **PAPER/NOTES | REGENCY 5**

SPEECH AND TOUCH

SESSION CHAIR: Steve Brewster, *University of Glasgow*

NOTE | FingerCloud: Uncertainty and autonomy handover in capactive sensing

Simon Rogers, John Williamson, Craig Stewart, Rod Murray-Smith, *University of Glasgow, UK*

Probabilistic filters are used for robust finger tracking over capacitive arrays on handheld devices, and we show how uncertainty from such sensing can be used in interaction design.

PAPER | The Generalized Perceived Input Point Model and How to Double Touch Accuracy by Extracting Fingerprints

Christian Holz, Patrick Baudisch, *Hasso Plattner Institute, Germany*

Proposes a new model explaining the inaccuracy of touch input. Shows how to exploit the model to create highly precise touch input devices.

NOTE | Finger-Count & Radial-Stroke Shortcuts: 2 Techniques for Augmenting Linear Menus on Multi-Touch Surfaces

Gilles Bailly, Eric Lecolinet, Yves Guiard, *Telecom ParisTech, France*

We present and evaluate Finger-Count and Radial-Stroke Shortcuts, two multi-finger two-handed interaction techniques aimed at augmenting the menubar on multi-touch surfaces, while maintaining compatibility with traditional interaction techniques.

NOTE | Speech Dasher: Fast Writing using Speech and Gaze

Keith Vertanen, David J.C. MacKay, *University of Cambridge, UK*

Speech Dasher allows writing using speech and a zooming interface. Users speak what they want to write and then navigate through the space of recognition hypotheses to correct errors.

■ **PAPERS | REGENCY 6**

END-USER PROGRAMMING I

SESSION CHAIR: Carl Gutwin, *University of Saskatchewan*

PAPER | d.note: Revising User Interfaces Through Change Tracking, Annotations, and Alternatives

Björn Hartmann, *University of California at Berkeley, USA*
Sean Follmer, Antonio Ricciardi, Timothy Cardenas, Scott R. Klemmer, *Stanford University, USA*

Introduces d.note, a revision tool for user interface prototypes. Reports two studies that compare production and interpretation of revisions in d.note to sketching on static images.

PAPER | FrameWire: A Tool for Automatically Extracting Interaction Logic from Paper Prototyping Tests

Yang Li, *University of Washington, USA*
Xiang Cao, *Microsoft Research Cambridge, UK*
Katherine Everitt, Morgan Dixon, James Landay, *University of Washington, USA*

Describes a system for automatically extracting interaction logic and test statistics from video clips of paper prototyping tests and generating interactive HTML-based prototypes; a way of enhancing UI prototyping practice.

PAPER | Example-Centric Programming: Integrating Web Search into the Development Environment

Joel Brandt, *Stanford University & Adobe Systems, USA*
Mira Dontcheva, Marcos Weskamp, *Adobe Systems, USA*
Scott Klemmer, *Stanford University, USA*

Presents the design and evaluation of a system that helps programmers locate example code. Findings suggest that task-specific search interfaces can significantly change how and when people search the Web.

■ **PAPERS | REGENCY 7**

PERFORMANCE, STAGECRAFT, AND MAGIC

SESSION CHAIR: Barry Brown, *University of California San Diego*

PAPER | Eliza meets the Wizard-of-Oz: Blending Machine and Human Control of Embodied Characters

Steven Dow, *Stanford University, USA*
Manish Mehta, Blair MacIntyre, *Georgia Institute of Technology, USA*
Michael Mateas, *University of California at Santa Cruz, USA*

We describe a design space for blending machine and human control in embodied character experiences and longitudinally investigate two different "behind-the-scene" tasks for amateur operators during a gallery installation

PAPER | A Stage-Based Model of Personal Informatics Systems

Ian Li, Anind Dey, Jodi Forlizzi, *Carnegie Mellon University, USA*

We present a stage-based model of personal informatics systems, which collect personal information for the purpose of self-reflection. We describe properties of the model and barriers in the stages.

PAPER | Deception and Magic in Collaborative Interaction

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

A study of an interactive magical performance that employed video tracking highlights beneficial uses of deception to create magical interfaces and extends HCI theories concerning collaboration, ambiguity and trajectories

■ **PAPERS | HANOVER CDE**

WRITING IN THE REAL WORLD

SESSION CHAIR: Andy Wilson, *Microsoft Research*

PAPER | NiCEBook - Supporting Natural Note Taking

Peter Brandl, Michael Haller, Christoph Richter, *Upper Austria University of Applied Sciences, Austria*

We present a novel notebook that supports natural note-taking with additional tagging functionality for structuring notes. According note-taking observations and a first usability study are discussed.

PAPER | The NiCE Discussion Room: Integrating Paper and Digital Media to Support Co-Located Group Meetings

Michael Haller, Jakob Leitner, Thomas Seifried, Peter Brandl, Christoph Richter, Adam Gokcezade, *Upper Austria University of Applied Sciences, Austria*
Stacey D. Scott, James Wallace, *University of Waterloo, Canada*
Seth Hunter, *Massachusetts Institute of Technology, USA*

The NiCE Discussion Room presents the design and evaluation of an augmented meeting room that supports the integration of a digital whiteboard, paper-based sketch input, and personal devices (e.g. laptops).

PAPER | Weightless Walls and the Future Office

Yuichiro Takeuchi, *Sony Computer Science Laboratories, Inc., Japan*

Presents a vision for future office environments, centered around the idea of incorporating "weightless walls". Can trigger discussions among HCI/CSCW researchers, as well as designers and architects.

■ **TOCHI INVITED PAPERS | HANOVER FG**

STUDYING AND PROTOTYPING

SESSION CHAIR: Robin Jeffries, *Google, USA*

TOCHI | Unpacking The Television: User Practices Around A Changing Technology

Louise Barkhuus, Barry Brown, *University of California at San Diego, USA*

Describes the changing world of television watching, contrasting PVR and TV downloading use.

TOCHI | The Calendar is Crucial: Coordination and Awareness through the Family Calendar

Carman Neustaedter, *Kodak Research Labs, USA*
AJ Brush, *Microsoft Research, USA*
Saul Greenberg, *University of Calgary, Canada*

Describes interview studies of families' calendaring routines. Presents findings on calendar types, calendar content, family types, and guidelines for the design of digital family calendars.

TOCHI | Out On The Town: A Socio-Physical Approach To The Design Of A Context Aware Urban Guide

Jeni Paay, Jesper Kjeldskov, *Aalborg University, Denmark*
Steve Howard, Bharat Dave, *The University of Melbourne, Australia*

We propose, illustrate and evaluate a multi-disciplinary approach combining rapid ethnography, architectural analysis, design sketching and paper prototyping to influence design of mobile context-aware social software for urban environments.

TOCHI | Rapid Prototyping and Evaluation of In-Vehicle Interfaces

Dario Salvucci, *Drexel University, USA*

Describes an integrated tool for prototyping and evaluating new in-vehicle interfaces using cognitive models. Allows designers to evaluate interfaces with respect to their potential for driver distraction.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

CAN WE ALL STAND UNDER OUR UMBRELLA? THE ARTS AND DESIGN RESEARCH IN HCI

ORGANIZERS:
Gilbert Cockton, *Northumbria University, UK*
Bardzell Shaowen, *Indiana University, USA*
Blythe Mark, *University of York, UK*
Bardzell Jeffrey, *Indiana University, USA*

Tuesday

= 15 minutes = 30 minutes = unscheduled time

	8:00–8:45	9:00–10:30	11:30–13:00	14:30–16:00	16:30–18:00
Centennial 1		**Papers** Pointing and Selecting Page 34	**Papers/Case Study** Medical Exploration Page 38	**Papers/Notes** Input, Security, and Page 42	**Lifetime Research Award** Lucy Suchman Page 46
Centennial 2	CHI Madness Page 34	**Lifetime Practice Award** Karen Holtzblatt Page 34	**Panel** Computing Technology in International Development Page 38	**Case Studies** Software and Methods Page 42	**Panel** E-Government: Services for Everyone, Everywhere, Eventually Page 46
Centennial 3		**Papers** Browsing Page 34	**Papers** Understanding & Supporting Programming Page 38	**Papers** Tangible Page 42	**Papers** HCI for All Page 46
Centennial 4		**Papers/Notes** At Home With Computing Page 35	**Papers/Notes/Case Study** Tagging Page 39	**Papers** Crisis Informatics Page 43	**Papers/Notes** Machine Learning & Web Interactions Page 47
Regency 5		**Papers** End User Programming II Page 35	**Papers/Notes** Sense and Sustainability Page 39	**Papers** Avatars & Virtual Environments Page 43	**Papers** Caring for Ourselves Page 47
Regency 6		**Papers/Notes** Sharing in Social Media Page 36	**Papers/Notes** Brains and Brawn Page 39	**Papers** Seniors Using Technologies Page 44	**Papers/Notes** Communicating Page 47
Regency 7		**Papers** HCI & India Page 36	**Papers** Sharing Content & Searches Page 40	**Papers/Notes** Understanding Comments Page 44	**Papers/Notes** Interaction Techniques Page 47
Hanover CDE		**Papers** Tactile Interaction Page 37	**alt.chi** Monsters Attack! Page 40	**alt.chi** alt.ernative Methods Page 44	**Papers** Driving, Interrupted Page 48
Hanover FG		**Papers** User Characteristics & Large-Scale Tracking Page 37	**Papers/Notes** Gesturing and Drawing Page 41	**TOCHI** UIDL for Next Generation UI Page 45	**TOCHI** Input and Direct Manipulation Page 48
Chicago ABC		**SIG** Best Practices in Longitudinal Research Page 37	**SIG** The Impact of Mergers/ Acquisitions on User Experience Organizations Page 41	**SIG** Engineering Community Page 45	**SIG** CHI 2010 User Experience Page 48

Commons/Grand Hall

Exhibits & Info Booth
10:30–18:00

Media Showcase Interactivity Demos
10:30–11:30
13:30–14:30

Media Showcase Performance Panel I
14:30–16:00
Commons Stage

Media Showcase Interactivity Demo Panel I
16:30–18:00
Commons Stage

Special Events

Spotlight on Work-in-Progress Posters (WIP 1–96) and Student Research Competition (SRC)
10:30–11:30
Commons and Lobby

Media Showcase Performances
11:30–13:00
Commons Stage

Job Fair
18:00–20:00
Commons

Media Showcase Video Night
18:30–20:00
Centennial 2

CHI MADNESS | CENTENNIAL 1

8:00-8:45

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

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

■ **PAPER | CENTENNIAL 1**

POINTING AND SELECTING

SESSION CHAIR: Michel Beaudouin-Lafon, *Université Paris-Sud*

PAPER | Why it's Quick to be Square: Modelling New and Existing Hierarchical Menu Designs

David Ahlström, *Klagenfurt University, Austria*
Andy Cockburn, *University of Canterbury, New Zealand*
Carl Gutwin, *University of Saskatchewan, Canada*
Pourang Irani, *University of Manitoba, Canada*

Describes a model that predicts performance with hierarchical menus. Empirically validates the model with various designs, including a novel SquareMenu. Demonstrates how modelling can motivate new designs and explain performance.

PAPER | pCubee: A Perspective-Corrected Handheld Cubic Display

Ian Stavness, Billy Lam, Sidney Fels,
University of British Columbia, Canada

Describes a handheld cubic display system made with five flat-panel screens that uses perspective-corrected rendering and real-time physics simulation to create compelling visualization and interaction techniques for 3D content.

PAPER | Bias towards Regular Configuration in 2D Pointing

Huahai Yang, *IBM Research - Almaden, USA*
Xianggang Xu, *Civil Aviation Medical Center, China*

Introduce the framework of configuration space as a way of understanding HCI tasks. Show that 2D pointing task performance reflects a bias towards a regular configuration.

■ **SIGCHI AWARD INVITED TALK | CENTENNIAL 2**

LIFETIME PRACTICE AWARD RECIPIENT:
Karen Holtzblatt, *InContext*

SESSION CHAIR: Gary Olson, *University of California Irvine, USA*
See page 14

■ **PAPERS | CENTENNIAL 3**

BROWSING

SESSION CHAIR: John Stasko, *Georgia Tech*

PAPER | A Study of Tabbed Browsing Among Mozilla Firefox Users

Patrick Dubroy, Ravin Balakrishnan, *University of Toronto, Canada*

Study of how Firefox users use multiple tabs and windows. Provides quantitative and qualitative data which can guide the design of future web browser interfaces.

PAPER | Using Text Animated Transitions to Support Navigation in Document Histories

Fanny Chevalier, *Microsoft-INRIA joint center, France*
Pierre Dragicevic, *INRIA, France*
Anastasia Bezerianos, *Ecole Centrale Paris, France*
Jean-Daniel Fekete, *INRIA, France*

We propose and evaluate smooth text animations for transitioning between document revisions. Combined with simple visualization and navigation tools, we introduce a system for rapid exploration of text revision histories.

PAPER | Dynamic Query Interface for Spatial Proximity Query with Degree-of-Interest Varied by Distance to Query Point

Myoungsu Cho, Bohyoung Kim, *Seoul National University, Korea*
Dong Kyun Jeong, *Samsung Advanced Institute of Technology, Korea*
Yeong-Gil Shin, Jinwook Seo, *Seoul National University, Korea*

This paper presents a novel dynamic query interface for formulating composite queries where the satisfying range of an attribute depends on another attribute. Our controlled experiment showed the interface's efficiency.

■ PAPERS/NOTES | CENTENNIAL 4

AT HOME WITH COMPUTING

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

PAPER | Access Control for Home Data Sharing: Attitudes, Needs and Practices

Michelle L. Mazurek, J.P. Arsenault, Joanna Bresee, Nitin Gupta, *Carnegie Mellon University, USA*
Iulia Ion, *ETH-Zurich, Switzerland*
Christina Johns, Daniel Jonggyu Lee, Yuan Liang, Jennifer Olsen, Brandon Salmon, Rich Shay, Kami Vaniea, Lujo Bauer, Lorrie Faith Cranor, Gregory R. Ganger, *Carnegie Mellon University, USA*
Michael K. Reiter, *University of North Carolina, USA*

Presents results from interviews with non-expert households concerning attitudes and practices regarding controlling access to home-centered data. Provides guidelines for designing usable access-control systems for home environments.

NOTE | Sharing Conversation and Sharing Life: Video Conferencing in the Home

Tejinder K. Judge, *Virginia Tech, USA*
Carman Neustaedter , *Kodak Research Labs, USA*

A study of video conferencing practices in the home. Findings will inform the design of future domestic communication technologies.

PAPER | Who's Hogging the Bandwidth: The Consequences of Revealing the Invisible in the Home

Marshini Chetty, *Georgia Institute of Technology, USA*
Richard Banks, Richard Harper, Tim Regan, Abigail Sellen, Christos Gkantsidis, Thomas Karagiannis, Peter Key, *Microsoft Research Cambridge, UK*

Created and evaluated a home bandwidth management tool which showed revealing resource usage surfaces household politics and that personal representation and access control are important design considerations for such systems.

NOTE | Investigating Narrative Structure in Mobile Games for Seniors

Sharon Lynn Chu Yew Yee, Henry Been-Lirn Duh, *National University of Singapore, Singapore*
Francis Quek, *Virginia Polytechnic Institute and State University, USA*

Exposes the value of narrative structure on self-reported game enjoyment among senior adults through a controlled study with nineteen elderly, regardless of their gameplay style.

■ PAPERS | REGENCY 5

END-USER PROGRAMMING II

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

PAPER | Learning on the Job: Characterizing the Programming Knowledge and Learning Strategies of Web Designers

Brian Dorn, Mark Guzdial, *Georgia Institute of Technology, USA*

Reports on a study of professional web developers that explores their knowledge of fundamental programming concepts and their strategies for learning new information while while working.

PAPER | A Strategy-Centric Approach to the Design of End-User Debugging Tools

Valentina I. Grigoreanu, *Oregon State University & Microsoft Corporation, USA*
Margaret M. Burnett, *Oregon State University, USA*
George G. Robertson, *Microsoft Research, USA*

Demonstrates the potential of a strategy-centric approach to tool design through StratCel, an add-in for Excel. StratCel increased participants' debugging success. Results also include validated design guidelines for debugging tools.

PAPER | Here's What I Did: Sharing and Reusing Web Activity with ActionShot

Ian Li, *Carnegie Mellon University, USA*
Jeffrey Nichols, Tessa Lau, Clemens Drews, Allen Cypher, *IBM Research - Almaden, USA*

ActionShot creates a fine-grained history of users' browsing activities, facilitates browsing and searching through this history, and enables sharing portions of the history through established social networking tools.

■ PAPERS/NOTES | REGENCY 6

SHARING IN SOCIAL MEDIA

SESSION CHAIR: Heather Richter Lipford, *University of North Carolina*

NOTE | Patterns of Usage in an Enterprise File-Sharing Service: Publicizing, Discovering, and Telling the News

Michael Muller, David R Millen, Jonathan Feinberg, *IBM Research, USA*

Describes four user activity patterns in a large-scale enterprise file-sharing system. Goals are to inform social-software research, and to influence service user interface design.

PAPER | The Life and Times of Files and Information: A Study of Desktop Provenance

Carlos Jensen, Heather Lonsdale, *Oregon State University, USA*
Eleanor Wynn, *Intel Corporation, USA*
Jill Cao, Michael Slater, Thomas G. Dietterich, *Oregon State University, USA*

This paper presents a longitudinal study of information flow and reuse on the desktop. These results inform the design of new desktop search techniques and novel approaches to file management.

PAPER | The Effect of Audience Design on Labeling, Organizing, and Finding Shared Files

Emilee Rader, *Northwestern University, USA*

Experiment results suggest thinking about labeling and organizing files not just as storage and categorization, but as a communicative activity.

NOTE | Fitting an Activity-Centric System into an Ecology of Workplace Tools

Aruna Balakrishnan, *Carnegie Mellon University, USA*
Tara Matthews, Thomas Moran, *IBM Research, USA*

User study of an activity-centric system in real work environments, describes the main usage pattern for an activity-centric system and evidence that it helped reduce fragmentation of activity-related artifacts.

■ PAPERS | REGENCY 7

HCI AND INDIA

SESSION CHAIR: Scott Robertson, *University of Hawaii*

PAPER | Avaaj Otalo - A Field Study of an Interactive Voice Forum for Small Farmers in Rural India

Neil Patel, *Stanford University, USA*
Deepti Chittamuru, *University of California at Berkeley, USA*
Anupam Jain, *IBM India Research Laboratory, India*
Paresh Dave, *Development Support Center, India*
Tapan S. Parikh, *University of California at Berkeley, USA*

Presents the usage patterns and social dynamics that emerged on Avaaj Otalo over seven months. We discuss implications of the findings on design of voice social media for developing regions.

PAPER | An Exploratory Study of Unsupervised Mobile Learning in Rural India

Anuj Kumar, *Carnegie Mellon University, USA*
Anuj Tewari, *University of California at Berkeley, USA*
Geeta Shroff, *Carnegie Mellon University, USA*
Deepti Chittamuru, *University of California at Berkeley, USA*
Matthew Kam, *Carnegie Mellon University, USA*
John Canny, *University of California at Berkeley, USA*

Presents a study of unsupervised usage of cellphone-based learning games in rural India. Shows the viability of mobile learning in everyday rural contexts, and challenges for researchers undertaking similar studies.

PAPER | Where There's a Will There's a Way: Mobile Media Sharing in Urban India

Thomas N. Smyth, *Georgia Institute of Technology, USA*
Satish Kumar, Indrani Medhi, *Microsoft Research India, India*
Kentaro Toyama, *University of California at Berkeley, USA*

Describes a rich ecosystem surrounding the exchange of peer-to-peer entertainment media on Bluetooth-enabled mobile phones in urban India. Argues that incentives such as entertainment can overcome many barriers in ICT4D.

■ PAPERS | HANOVER CDE

TACTILE INTERACTION

SESSION CHAIR: Orit Shaer, *Wellesley College*

PAPER | Mobile Music Touch: Mobile Tactile Stimulation For Passive Learning

Kevin Huang, *Georgia Institute of Technology, USA*
Daniel Kohlsdorf, Claas Ahlrichs, *University of Bremen, Germany*
Thad Starner, *Georgia Institute of Technology, USA*
Ruediger Leibrandt, *University of Bremen, Germany*
Ellen Do, Gil Weinberg, *Georgia Institute of Technology, USA*

We introduce Passive Haptic Learning through Mobile Music Touch, a glove with embedded vibrators and music player, which trains users to play simple piano melodies while they attend other tasks.

PAPER | Characteristics of Pressure-Based Input for Mobile Devices

Craig Stewart, *University of Glasgow, UK*
Michael Rohs, *TU Berlin, Germany*
Georg Essl, *University of Michigan, USA*
Sven Kratz, *TU Berlin, Germany*

Conducted studies to clarify fundamental characteristics of finger-based pressure input on mobile devices. Serves as basis for future interaction design and research for force-based mobile interactions.

PAPER | LayerPaint: A Multi-layer Interactive 3D Painting Interface

Chi-Wing Fu, Jiazhi Xia, Ying He, *Nanyang Technological University, Singapore*

A multi-layer WYSIWYG interactive painting interface that provides us with novel painting interactions, such as drawing of very long strokes continuously over frontmost and occluded surfaces in a depth-connected manner.

■ PAPERS | HANOVER FG

USER CHARACTERISTICS AND LARGE-SCALE TRACKING

SESSION CHAIR: Darren Gergle, *Northwestern University*

PAPER | The Effects of Diversity on Group Productivity and Member Withdrawal in Online Volunteer Groups

Jilin Chen, Yuqing Ren, John Riedl, *University of Minnesota, USA*

Longitudinal analysis of the effects of group diversity on Wikipedia based on social psychology theories. Quantitatively demonstrated the relationship between diversity measures and group performance in online volunteer groups.

PAPER | Gender Demographic Targeting in Sponsored Search

Bernard J. Jansen, Lauren Solomon,
The Pennsylvania State University, USA

This research concludes gender advertising on Web search engines doesn't generate more sales and costs more relative to gender-neutral advertising. It is beneficial for advertisers to target gender-neutral advertising.

PAPER | Exploring the Workplace Communication Ecology

Thea Turner, Pernilla Qvarfordt, Jake T. Biehl,
Gene Golovchinsky, Maribeth Back, *FXPAL, USA*

We explore the communication ecology of a small company, providing insights on trends in technology use, how users choose among available technologies, and how technology use can define other behaviors.

■ SPECIAL INTEREST GROUP | CHICAGO ABC

BEST PRACTICES IN LONGITUDINAL RESEARCH

ORGANIZERS:
Jhilmil Jain, *Hewlett Packard Laboratories, USA*
Stephanie Rosenbaum, *Tec-Ed, Inc, USA*
Catherine Courage, *Citrix Systems, USA*

■ PAPERS/CASE STUDIES | CENTENNIAL 1

MEDICAL EXPLORATION

SESSION CHAIR: Shamsi Iqbal, *Microsoft Research*

PAPER | Exploring the Accessibility and Appeal of Surface Computing for Older Adult Health Care Support

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

This paper explores multitouch surface technology with older adults in the context of supporting health care interaction between a doctor and older patient.

PAPER | Patients, Pacemakers, and Implantable Defibrillators: Human Values and Security for Wireless Implantable Medical Devices

Tamara Denning, Alan Borning, Batya Friedman, *University of Washington, USA*
Brian Gill, *Seattle Pacific University, USA*
Tadayoshi Kohno, *University of Washington, USA*
William H. Maisel, *Medical Device Safety Institute, Beth Israel Deaconess Medical Center, and Harvard Medical School, USA*

Presents results of an investigation of patient views and values regarding computer security for implantable cardiac devices with wireless capabilities, and offers design guidelines for future device security systems.

CASE STUDY | Rehabilitation Centred Design

Madeline Balaam, *University of Sussex, UK*
Stefan Rennick Egglestone, *University of Nottingham, UK*
Ann-Marie Hughes, *University of Southampton, UK*
Thomas Nind, *University of Dundee, UK*
Anna Wilkinson, *Sheffield Hallam University, UK*
Eric Harris, Lesley Axelrod, *University of Sussex, UK*
Geraldine Fitzpatrick, *Vienna Technical University, Austria*

Presents a case study of designing interactive technology for post-stroke rehabilitation at home. Highlights complex tensions between designing for rehabilitation (and other possible behaviour-change scenarios) and designing for the user.

■ PANEL | CENTENNIAL 2

COMPUTING TECHNOLOGY IN INTERNATIONAL DEVELOPMENT: WHO, WHAT, WHERE, WHEN, WHY AND HOW?

PANELISTS:
Matthew Kam, *Carnegie Mellon University, USA*
Susan Dray, *Dray and Associates, USA*
Kentaro Toyama, *Microsoft Research, India*
Gary Marsden, *University of Cape Town, South Africa*
Tapan Parikh, *University of California, Berkeley, USA*
Ed Cutrell, *Microsoft Research, India*

Engage broader CHI community by explaining why international development is important to HCI as a discipline. Suggests how CHI researchers and practitioners can contribute to international development.

■ PAPERS | CENTENNIAL 3

UNDERSTANDING AND SUPPORTING PROGRAMMING

SESSION CHAIR: Mira Dontcheva, *Adobe*

PAPER | Perceptions and Practices of Usability in the Free/Open Source Software (FOSS) Community

Michael Terry, Matthew Kay, Ben Lafreniere, *University of Waterloo, Canada*

Reports why open source developers are motivated to address usability concerns in the absence of economic incentives.

PAPER | End-User Mashup Programming: Through the Design Lens

Jill Cao, *Oregon State University, USA*
Yann Riche, *Riche Design, USA*
Susan Wiedenbeck, *Drexel University, USA*
Margaret Burnett, *Oregon State University, USA*
Valentina I. Grigoreanu, *Oregon State University & Microsoft Corporation, USA*

We use design theories as a lens on end-user mashup programming, revealing insights into programming as a design activity and implications for the design of end-user programming environments.

PAPER | What Would Other Programmers Do? Suggesting Solutions to Error Messages

Björn Hartmann, *University of California at Berkeley, USA*
Daniel MacDougall, Joel Brandt, Scott R. Klemmer, *Stanford University, USA*

Introduces HelpMeOut, a social recommender system that aids the debugging of error messages during programming by suggesting solutions that peers have applied in the past.

■ **PAPERS/NOTES/CASE STUDY | CENTENNIAL 4**

TAGGING

SESSION CHAIR: Jennifer Lai, *IBM*

NOTE | Cultural Difference in Image Tagging

Wei Dong, Wai-Tat Fu, *University of Illinois at Urbana-Champaign, USA*

Our study showed cultural differences in how European Americans and Chinese assign tags to different parts of digital images. Results are useful for developing culture-sensitive tag-based image search interface.

PAPER | Social Tagging Revamped: Supporting the Users' Need of Self-promotion through Social Filtering

Mauro Cherubini, *Telefónica Research, Spain*
Alejandro Gutierrez, *University of Illinois at Urbana-Champaign, USA*
Rodrigo de Oliveira, Nuria Oliver, *Telefónica Research, Spain*

We consider this work as a first step towards the definition of Social Games With A Purpose: games that could take advantage of the specific properties of social networks.

NOTE | Some Observations on the "Live" Collaborative Tagging of Audio Conferences in the Enterprise

Shreeharsh Kelkar, Ajita John, Doree Duncan Seligmann, *Avaya Labs Research, USA*

Presents observations on the usage of a system that allows participants to collaboratively "live" tag an ongoing meeting. Post-meeting, live-tags may help audio navigation and audio search of archived meetings.

CASE STUDY | Best of Both Worlds: Improving Gmail Labels with the Affordances of Folders

Kerry Rodden, Michael Leggett, *Google, USA*

Describes a redesign of Gmail's user interface for labeling, to provide more folder-like functionality. Includes detailed insight into design process, and post-launch evaluation of impact on millions of users.

■ **PAPERS/NOTE | REGENCY 5**

SENSE AND SUSTAINABILITY

SESSION CHAIR: Daniela Busse, *SAP*

PAPER | One Size Does Not Fit All: Applying the Transtheoretical Model to Energy Feedback Technology Design

Helen Ai. He, Saul Greenberg, Elaine M. Huang, *University of Calgary, Canada*

Our motivational framework for sustainable design, based on the Transtheoretical Model, moves beyond a "one-size-fits-all" solution to target individual motivations at different stages of behavioral change to motivate sustainable action.

PAPER | Small Business Applications of Sourcemap: A Web Tool for Sustainable Design and Supply Chain Transparency

Leonardo Bonanni, *MIT Media Laboratory, USA*
Matthew Hockenberry, *MIT Center for Future Civic Media, USA*
David Zwarg, *Avencia Inc., USA*
Chris Csikszentmihályi, *MIT Center for Future Civic Media, USA*
Hiroshi Ishii, *MIT Media Laboratory, USA*

We present techniques for design and supply chain transparency to support social and environmental sustainability by small businesses from the perspective of a participatory process of design in HCI.

NOTE | FeedWinnower: Layering Structures Over Collections of Information Streams

Lichan Hong, Gregorio Convertino, Bongwon Suh, Ed H. Chi, Sanjay Kairam, *Palo Alto Research Center (PARC), USA*

Presenting an enhanced RSS feed reader helping users to filter feed items by four facets (topic, people, source, and time), thus facilitating feed triage. A formative evaluation is also reported.

■ **PAPERS/NOTES | REGENCY 6**

BRAINS AND BRAWN

SESSION CHAIR: Steve Benford, *Nottingham University*

NOTE | Making Muscle-Computer Interfaces More Practical

T. Scott Saponas, *University of Washington, USA*
Desney S. Tan, Dan Morris, *Microsoft Research, USA*
Jim Turner, *Microsoft Corporation, USA*
James A. Landay, *University of Washington, USA*

We extend previous muscle-computer interface research by presenting techniques for cross-session finger gesture classification using our wireless muscle-sensing armband.

NOTE | A Novel Brain-Computer Interface Using a Multi-Touch Surface

Beste F. Yuksel, Michael Donnerer, James Tompkin, Anthony Steed, *University College London, UK*

Describes a brain-computer interface that allows users to select real objects placed on a multi-touch table solely using their thoughts. Highlights potential for BCIs to be integrated into novel uses.

PAPER | The Influence of Implicit and Explicit Biofeedback in First-Person Shooter Games

Kai Kuikkaniemi, Toni Laitinen, Marko Turpeinen, Timo Saari, Ilkka Kosunen, *Helsinki Institute for Information Technology, Finland*
Niklas Ravaja, *Center for Knowledge and Innovation Research, Finland*

Describes a biofeedback adaptive first-person shooter game platform and an analysis of the impact of implicit and explicit biofeedback mechanisms. Can help in designing biofeedback and affective computer system.

PAPER | Effects of Interactivity and 3D-motion on Mental Rotation Brain Activity in an Immersive Virtual Environment

Daniel Sjölie, Kenneth Bodin, Eva Elgh, Johan Eriksson, Lars-Erik Janlert, Lars Nyberg, *Umeå University, Sweden*

Presents results from a study on the effect of interaction on brain activity in a virtual environment. Can inform the development of complex interaction styles incorporating brain measurements.

■ **PAPERS | REGENCY 7**

SHARING CONTENT AND SEARCHES

SESSION CHAIR: Dan Cosley, *Cornell University*

PAPER | Tools-at-Hand and Learning in Multi-Session, Collaborative Search

Robert Capra, Gary Marchionini, Javier Velasco-Martin, Katrina Muller, *University of North Carolina, USA*

We present results from interviews with 30 people in three cohorts (academic, corporate, and medical information) about their current practices conducting, managing, and sharing information from ongoing, exploratory searches.

PAPER | Share: A programming environment for loosely bound cooperation

Yannick Assogba, *MIT Media Lab, USA*
Judith Donath, *Harvard University Berkman Center, USA*

Describes the design of a system for programmer cooperation via code sharing in web based communities. Explores a form of collaboration centered on shared resources rather than shared goals.

PAPER | Enhancing Directed Content Sharing on the Web

Michael S. Bernstein, Adam Marcus, David R. Karger, Robert C. Miller, *MIT CSAIL, USA*

We introduce FeedMe, a plug-in for Google Reader that makes link sharing a more salient part of the user experience through recipient recommendations and social feedback.

■ **alt.chi | HANOVER CDE**

MONSTERS ATTACK!

SESSION CHAIR: Daniel Wigdor, *Microsoft*

alt.chi | Sequential Art for Science and CHI

Duncan Rowland, *University of Nottingham, UK*
Dan Porter, *Giant Thumb, UK*
Mel Gibson, *Northumbria University, UK*
Kevin Walker, Joshua Underwood, Rose Luckin, *Knowledge Lab, UK*
Hillary Smith, Geraldine Fitzpatrick, Judith Good, *University of Sussex, UK*
Brendan Walker, *Aerial UK, UK*
Alan Chamberlain, Stefan Rennick Egglestone, Joe Marshall, Holger Schnädelbach, Steve Benford, *University of Nottingham, UK*

alt.chi | Early Explorations of CAT: Canine Amusement and Training

Chadwick A. Wingrave, Jeremy Rose, *University of Central Florida, USA*
Todd Langston, *Pack Life K-9 Behavior Solutions, USA*
Joseph J. LaViola Jr, *University of Central Florida, USA*

alt.chi | The Coffee Lab: Developing a Public Usability Space

Maria Karam, *Ryerson University, Canada*

alt.chi | Augmented Reality - Surface Style

Paul Hoover, Luis E. Cabrera, Curt Aumiller, *Microsoft, USA*

alt.chi | There's a Monster in my Kitchen: Using Aversive Feedback to Motivate Behaviour Change

Ben Kirman, Conor Linehan, Shaun Lawson, Derek Foster, Mark Doughty, *University of Lincoln, UK*

alt.chi | Blowtooth: Pervasive Gaming in Unique and Challenging Environments

Conor Linehan, Ben Kirman, Shaun Lawson, Mark Doughty, *University of Lincoln, UK*

■ PAPERS/NOTES | HANOVER FG

GESTURING AND DRAWING

SESSION CHAIR: Tony Tang, *Kodak*

NOTE | Scale Detection for a priori Gesture Recognition

Caroline Appert, *Université Paris-Sud, CNRS, France*
Olivier Bau, *Université Paris-Sud, INRIA, France*

Presents an algorithm to estimate the scale of an incomplete gesture input in comparison with a gesture template. Shows how this algorithm can improve users' experience with gesture-based interfaces.

NOTE | Insight into Goal-Directed Movement Strategies

Karin Nieuwenhuizen, *Eindhoven University of Technology, The Netherlands*
Dzmitry Aliakseyeu, *Philips Research Eindhoven, The Netherlands*
Jean-Bernard Martens, *Eindhoven University of Technology, The Netherlands*

Proposal of an analysis method that provides more detailed insight into applied movement strategies when using computer input devices. Can assist in the development of input devices and interaction techniques.

PAPER | Usable Gestures for Mobile Interfaces: Evaluating Social Acceptability

Julie Rico, Stephen Brewster, *University of Glasgow, UK*

This research investigates the importance of social acceptability as a design consideration in developing mobile gesture-based systems. The results describe user perceptions and social influences that affect gesture acceptability.

PAPER | iCanDraw? - Using Sketch Recognition and Corrective Feedback to Assist a User in Drawing Human Faces

Daniel Dixon, Manoj Prasad, Tracy Hammond, *Texas A&M University, USA*

Describes an assistive drawing application using sketch recognition for evaluating and providing corrective feedback on a user's sketch of a human face shown in a reference image.

■ SPECIAL INTEREST GROUP | CHICAGO ABC

BRANDING THE CHANGING ENTERPRISE - IMPACT OF MERGERS & ACQUISITIONS ON USER EXPERIENCE ORGANIZATIONS

ORGANIZERS:
Janaki Kumar, Dan Rosenberg, *SAP Labs, LLC, USA*
Michael Arent, *SAP Business Objects SAP Labs, LLC, USA*
Anna Wichansky, Madhuri Kolhathar, *Oracle, USA*
Roman Longoria, Bob Hendrich, *CA, USA*
Arnie Lund, *Microsoft Corporation, USA*

■ PAPER/NOTES | CENTENNIAL 1

INPUT, SECURITY, AND PRIVACY POLICIES

SESSION CHAIR: Kenton O'Hara, *Microsoft Research*

NOTE | The Secure Haptic Keypad: A Tactile Password System

Andrea Bianchi, *Korean Advanced Institute of Science and Technology, Korea*
Ian Oakley, *Universidade da Madeira, Portugal*
Dong-Soo Kwon, *Korean Advanced Institute of Science and Technology, Korea*

This paper proposes a novel design for shoulder-surfing resistant password input interface and method based on tactile cues (haptic password).

PAPER | Multi-Touch Authentication on Tabletops

David Kim, Paul Dunphy, *Newcastle University, UK*
Pam Briggs, *Northumbria University, UK*
Jonathan Hook, John Nicholson, *Newcastle University, UK*
James Nicholson, *Northumbria University, UK*
Patrick Olivier, *Newcastle University, UK*

Presents an initial exploration of the design space for observation resistant authentication for multi-touch tabletops. Contributes towards privacy respectful input of credentials in co-located collaborative contexts.

NOTE | ColorPIN - Securing PIN entry through indirect input

Alexander De Luca, Katja Hertzschuch, Heinrich Hussmann, *University of Munich, Germany*

Presents an authentication system based on indirect input that is resistant to shoulder surfing and camera attacks. A formal evaluation highlights increased security and performance issues due to raised complexity.

NOTE | Shoulder-Surfing Resistance with Eye-Gaze Entry in Click-Based Graphical Passwords

Alain Forget, Sonia Chiasson, Robert Biddle, *Carleton University, Canada*

Cued Gaze-Points is an eye gaze-based graphical password system resistant to shoulder-surfing. A user study showed potential usability and highlighted limits in gaze precision.

NOTE | Visual vs. Compact: A Comparison of Privacy Policy Interfaces

Heather Richter Lipford, Jason Watson, Michael Whitney, *University of North Carolina at Charlotte, USA*
Katherine Froiland, *University of Minnesota, USA*
Robert W. Reeder, *Microsoft, USA*

A comparison study of two prototype interfaces for privacy policies finds that users perform similarly with each, but have a clear preference for one or the other.

■ CASE STUDIES | CENTENNIAL 2

SOFTWARE AND METHODS

SESSION CHAIR: Tessa Lau, *IBM*

CASE STUDY | Needs Analysis: The Case of Flexible Constraints and Mutable Boundaries

Dorrit Billman, *NASA Ames Research Center & San Jose State University, USA*
Feary Michael, *NASA Ames Research Center, USA*
Schreckengost Debra, *TRAClabs, USA*
Sherry Lance, *George Mason University, USA*

We develop needs analysis methods/tools, particularly for domains with mutable or unknown constraints (planning for the space station). Recommended: iterative capture of high-level tasks and of work constraints; complementary representations.

CASE STUDY | Challenges of Software Recontextualization: Lessons Learned

Monique Janneck, *University of Hamburg, Germany*

Analyzes critical factors for success or failure of software introduction processes based on an understanding of software development as recontextualization process on the technical, organizational, human, and task level.

■ PAPERS | CENTENNIAL 3

TANGIBLE UI

SESSION CHAIR: Shahram Izadi, *Microsoft Research*

PAPER | Touch-Display Keyboards: Transforming Keyboards into Interactive Surfaces

Florian Block, Hans Gellersen, *Lancaster University, UK*
Nicolas Villar, *Microsoft Research Cambridge, UK*

Touch-Display Keyboards (TDKs) combine the physical qualities of conventional keyboards with dynamic display and touch-sensing. We explore the design-space of the TDK and contribute a series of novel interaction techniques.

PAPER | iCon: Utilizing Everyday Objects as Additional, Auxiliary and Instant Tabletop Controllers

Kai-Yin Cheng, Rong-Hao Liang, Bing-Yu Chen, *National Taiwan University, Taiwan*
Rung-Huei Liang, *National Taiwan University of Science and Technology, Taiwan*
Sy-Yen Kuo, *National Taiwan University, Taiwan*

We explored the possible design to utilize everyday objects on the tabletop as additional, auxiliary and instant controllers in low precision, low engagement, and medium-to-high frequency of use scenario.

PAPER | Lumino: Tangible Blocks for Tabletop Computers Based on Glass Fiber Bundles

Patrick Baudisch, Torsten Becker, Frederik Rudeck, *Hasso Plattner Institute, Germany*

Lumino building blocks allow tabletop computers based on diffuse illumination to recognize objects arranged in a three-dimensional structure.

■ PAPERS | CENTENNIAL 4

CRISIS INFORMATICS

SESSION CHAIR: Bill Tomlinson, *University of California Irvine*

PAPER | MOSES: Exploring New Ground in Media and Post-Conflict Reconciliation

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

Explores potential of rich multimedia for peacebuilding and reconciliation in countries after civil war. Describes MOSES video-sharing system deployed in Liberia. Reports qualitative study demonstrating positive reconciliation impact of system.

PAPER | Blogging in a Region of Violent Conflict: Supporting Transition to Recovery

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

This paper illustrates how blogs are important social tools that can support people in war zones by providing a safe virtual environment for community, identity, expression, and emotional support.

PAPER | Microblogging During Two Natural Hazards Events: What Twitter May Contribute to Situational Awareness

Sarah Vieweg, Amanda L. Hughes, Kate Starbird, Leysia Palen, *University of Colorado, USA*

Describes an analysis of Twitter communications during two concurrent natural hazards events in North America. Presents a theoretical framework to support extraction of situational awareness data during mass emergencies.

■ PAPERS | REGENCY 5

AVATARS AND VIRTUAL ENVIRONMENTS

SESSION CHAIR: Kori Inkpen, *Microsoft Research*

PAPER | Where Are You Pointing? The Accuracy of Deictic Pointing in CVEs

Nelson Wong, Carl Gutwin, *University of Saskatchewan, Canada*

We investigate how well people can point and interpret the direction of another person's pointing gesture. Our results show that deixis can be successful in CVEs for many pointing situations.

PAPER | Lie Tracking: Social Presence, Truth and Deception in Avatar-Mediated Telecommunication

William Steptoe, Anthony Steed, Aitor Rovira, *University College London, UK*
John Rae, *Roehampton University, UK*

Investigates user behavior, social presence and media richness during truthful and deceptive interaction in avatar- and video-mediated telecommunication. Discusses implications for the design of future visual telecommunication media interfaces.

PAPER | Embodied Social Proxy: Mediating Interpersonal Connection in Hub-and-Satellite Teams

Gina Venolia, John Tang, *Microsoft Research, USA*
Ruy Cervantes Fregoso, *University of California at Irvine, USA*
Sara Bly, *Sara Bly Consulting, USA*
George Robertson, Bongshin Lee, Kori Inkpen, *Microsoft Research, USA*

We developed a telepresence device which represents a remote coworker in his otherwise-collocated team. We found that the device's continuous physical presence made the remote worker more socially present.

■ **PAPERS | REGENCY 6**

SENIORS USING TECHNOLOGIES

SESSION CHAIR: Panayiotis Zaphiris, *Cyprus University of Technology*

PAPER | PointAssist for Older Adults: Analyzing Sub-Movement Characteristics to Aid in Pointing Tasks

Juan Pablo Hourcade, Christopher M. Nguyen, Keith B. Perry, Natalie L. Denburg, *University of Iowa, USA*

Evaluation of a novel approach to assist older adults in pointing tasks. Discussion of differences with young children and correlations with neuropsychological tests.

PAPER | Steadied-Bubbles: Combining Techniques to Address Pen-Based Pointing Errors for Younger and Older Adults

Karyn Moffatt, Joanna McGrenere, *University of British Columbia, Canada*

Older adults struggle with pen-based selection. We extend existing mouse-based and younger-user-targeted techniques and show that technique performance is task dependent. As such, combining techniques offers the best support overall.

PAPER | Learning to text: An interaction analytic study of how seniors learn to enter text on mobile phones

Alexandra Weilenmann, *Gothenburg University, Sweden*

Analysis of how senior users learn to enter text on their mobile phones. Implications for how we design for the aging population, and for how we think about novice users.

■ **PAPERS/NOTES | REGENCY 7**

UNDERSTANDING COMMENTS

SESSION CHAIR: Ed H Chi, *PARC*

PAPER | Opinion Space: A Scalable Tool for Browsing Online Comments

Siamak Faridani, Ephrat Bitton, Kimiko Ryokai, Ken Goldberg, *University of California at Berkeley, USA*

Reports results from a user study of Opinion Space, an online interface for visualizing and navigating a diversity of comments. Is alternative to comment lists that improves engagement, agreement, respect.

PAPER | Short and Tweet: Experiments on Recommending Content from Information Streams

Jilin Chen, *University of Minnesota, USA*
Rowan Nairn, Les Nelson, *Palo Alto Research Center, USA*
Michael Bernstein, *Massachusetts Institute of Technology, USA*
Ed Chi, *Palo Alto Research Center, USA*

Demonstrated quantitatively the effectiveness of 12 different algorithm designs for recommending interesting URLs on Twitter. Conducted field study of the system and discussed generalizing the result to similar platforms.

NOTE | Characterizing Debate Performance via Aggregated Twitter Sentiment

Nicholas Diakopoulos, *Rutgers University, USA*
David A. Shamma, *Yahoo! Research, USA*

Using aggregated Twitter sentiment we demonstrate visuals and metrics which can be used to inform the design of visual analytics systems for sensemaking around social video events.

NOTE | Dandelion: Supporting Coordinated Collaborative Authoring in Wikis

Changyan Chi, Michelle X. Zhou, Min Yang, Wenpeng Xiao, Yiqin Yu, Xiaohua Sun, *IBM Research - China, China*

Dandelion presents a tag-based approach to coordinated, co-authoring within a wiki. Four real-world pilot deployments demonstrate the usefulness of Dandelion especially in structured, collaborative authoring situations with designated coordinators.

■ **alt.chi | HANOVER CDE**

ALT.ERNATIVE METHODS

SESSION CHAIR: Steve Harrison, *Virginia Tech*

alt.chi | Hard-To-Use Interfaces Considered Beneficial (Some Of The Time)

Yann Riche, *Riche Design, USA*
Nathalie Henry Riche, *Microsoft Research, USA*
Petra Isenberg, *University of Calgary, Canada*
Anastasia Bezerianos, *Ecole Centrale Paris, France*

alt.chi | Communicating Software Agreement Content Using Narrative Pictograms

Matthew Kay, Michael Terry, *University of Waterloo, Canada*

alt.chi | There's Methodology In The Madness: Toward Critical HCI Ethnography

Amanda Williams, *Concordia University, Canada & University of California at Irvine, USA*
Lilly Irani, *University of California atIrvine, USA*

alt.chi | Interaction Design In The University: Designing Disciplinary Interactions

Gale Moore, Danielle Lottridge, *University of Toronto, Canada*

alt.chi | Design Situations And Methodological Innovation In Interaction Design

Gilbert Cockton, *Northumbria University, UK*

alt.chi | Experience In Social Affective Applications: Methodologies And Case Study

Paul André, m. c. schraefel, *University of Southampton, UK*
Alan Dix, *University of Lancaster, UK*
Ryen W. White, *Microsoft Research, USA*

■ **TOCHI | HANOVER FG**

USER INTERFACE DESCRIPTION LANGUAGES FOR NEXT GENERATION USER INTERFACES

SESSION CHAIR: Robert J.K. Jacob

TOCHI | A Specification Paradigm For The Design And Implementation Of Tangible User Interfaces

Orit Shaer, *Wellesley College, USA*
Robert J.K. Jacob, *Tufts University, USA*

This paper contributes a visual specification language for tangible interfaces, an XML-compliant language, and a proof-of-concept prototype that semi-automatically translates high-level specifications into concrete implementations.

TOCHI | ICOs: A Model-Based User Interface Description Technique For Interactive Systems Engineering

David Navarre, Philippe Palanque, Jean-Francois Ladry, Eric Barboni, *IHCS-IRIT, Université Paul Sabatier - Toulouse 3, France*

This paper presents a notation for the specification and analysis of current and next generation interfaces and how the use of such notation improves reliability and usability of interactive systems.

TOCHI | Maria: A Universal Language For Service-Oriented Applications In Ubiquitous Environments

Fabio Paternò, Carmen Santoro, Lucio Davide Spano, *ISTI-CNR, Italy*

We present a novel model-based XML-based language for interactive multi-device applications based on Web services. It can be exploited both in authoring environments and in dynamic generation of migratory interfaces.

TOCHI | A Natural, Tiered And Executable Uidl For 3d User Interfaces Based On Concept-Oriented Design

Chadwick Wingrave, Joseph J. LaViola Jr., *UCF, USA*
Doug A. Bowman, *Virginia Tech, USA*

Studied natural representations of 3D interface design and development. This resulted in a natural, tiered, executable model to address development complexity and improve reuse as shown through multiple evaluation approaches.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

CHI 2010 ENGINEERING COMMUNITY SIG: THE ROLE OF ENGINEERING WORK IN CHI

ORGANIZERS:
Keith Butler, *CHI 2010 Engineering Community Chair, University of Washington, USA*

■ **SIGCHI AWARD INVITED TALK | CENTENNIAL 1**

CHI LIFETIME RESEARCH AWARD RECIPIENT:
Lucy Suchman, *Lancaster University*

SESSION CHAIR: To be announced
See page 13

■ **PANEL | CENTENNIAL 2**

E-GOVERNMENT: SERVICES FOR EVERYONE, EVERYWHERE, EVENTUALLY

PANELISTS:
Jeff Johnson, *UI Wizards, Inc. & SIGCHI U.S. Public Policy Committee, USA*
Jonathan Lazar, *Towson University & SIGCHI U.S. Public Policy Committee, USA*

■ **PAPERS | CENTENNIAL 3**

HCI FOR ALL

SESSION CHAIR: Michael Muller, *IBM*

PAPER | Homeless Young People's Experiences with Information Systems: Life and Work in a Community Technology Center

Jill Palzkill. Woelfer, David G. Hendry, *University of Washington, USA*

Reports on the use of digital media by homeless young people in a community technology center. Framework of ecological considerations can assist designers of information systems for homeless populations.

PAPER | Feminist HCI: Taking Stock and Outlining an Agenda for Design

Shaowen Bardzell, *Indiana University, USA*

This paper outlines the state of the art and an agenda for "feminist HCI" as a theoretical perspective on interaction design. It proposes a number of "qualities of feminist interaction."

PAPER | Postcolonial Computing: A Lens on Design and Development

Lilly Irani, Janet Vertesi, Paul Dourish, Kavita Philip, *University of California at Irvine, USA*
Rebecca E. Grinter, *Georgia Institute of Technology, USA*

HCI research areas across the globe has raised complex issues. Postcolonial computing is a lens for understanding cultural difference, development, uneven economic relations, and cultural knowledges.

■ **PAPERS/NOTES | CENTENNIAL 4**

MACHINE LEARNING AND WEB INTERACTIONS

SESSION CHAIR: Per Ola Kristensson, *University of Cambridge*

PAPER | Interactive Optimization for Steering Machine Classification

Ashish Kapoor, Bongshin Lee, Desney Tan, Eric Horvitz, *Microsoft Research, USA*

ManiMatrix is an interactive system that allows interactive refinement of classification boundaries in a multiclass setting. The system interweaves visualization, interaction, and optimization to steer classification according to users preferences.

NOTE | A Longitudinal Study of How Highlighting Web Content Change Affects People's Web Interactions

Jaime Teevan, Susan T. Dumais, Daniel J. Liebling, *Microsoft Research, USA*

Longitudinal study shows that highlighting changes in Web content leads to increased Web page revisitation, and improved perception and use of content change within the revisited content.

NOTE | Examining Multiple Potential Models in End-User Interactive Concept Learning

Saleema Amershi, James Fogarty, *University of Washington, USA*
Ashish Kapoor, Desney S. Tan, *Microsoft Research, USA*

Re-examines a traditional interactive machine learning focus on "what class is this object?", broadening interaction to include examining multiple potential models. This approach improves the quality of end-user trained models.

PAPER | Signed Networks in Social Media

Jure Leskovec, *Stanford University, USA*
Daniel Huttenlocher, Jon Kleinberg, *Cornell University, USA*

We analyze on-line social networks where links can be either positive or negative. We extend theories from social psychology to explore implications of these signed networks for social computing applications.

■ PAPERS | REGENCY 5

CARING FOR OURSELVES

SESSION CHAIR: Mark Perry, *Brunel University*

PAPER | CONSTRUCTING IDEntities through Storytelling in Diabetes Management

Lena Mamykina, *Columbia University, USA*
Andrew Miller, Elizabeth Mynatt,
Georgia Institute of Technology, USA
Daniel Greenblatt, *Smart Technologies, Canada*

We discuss the importance of identity management in chronic disease care and the opportunities to support construction and negotiation of identity with health monitoring applications.

PAPER | Self-Monitoring, Self-Awareness, and Self-Determination in Cardiac Rehabilitation

Julie Maitland, *National Research Council Canada*
Institute for Information Technology, Canada
Matthew Chalmers, *University of Glasgow, UK*

A qualitative study of behavioural change within cardiac rehabilitation. Findings can assist those interested in developing health technology that accounts for the competing values and broader context of everyday life.

PAPER | Negotiating Boundaries: Managing Disease at Home

Rikke Aarhus, Stinne Aaløkke Ballegaard, *Aarhus University, Denmark*

Explores patients' boundary work in carrying out self-care in the home. Can assist designers in the developing of new medical technologies to be used outside a medical setting.

■ PAPERS/NOTES | REGENCY 6

COMMUNICATING

SESSION CHAIR: Susan Fussell, *Cornell University*

NOTE | Momentum: Getting and Staying on Topic Before the Brainstorm

Patti Bao, Elizabeth Gerber, Darren Gergle, David Hoffman,
Northwestern University, USA

Describes a creativity support tool that invites minimal participation before a brainstorm and then visualizes the results during the brainstorm.

NOTE | Layered Elaboration: A New Technique for Co-Design with Children

Gregory Walsh, Allison Druin, Mona Leigh Guha, Beth Foss,
Evan Golub, Leshell Hatley, Beth Bonsignore, Sonia Franckel,
University of Maryland, USA

This paper reports on "Layered Elaboration," a new co-design technique. It allows design teams to generate ideas through an iterative process in which prior ideas stay intact while extending concepts.

PAPER | Don't Just Stare at Me!

Ning Wang, Jonathan Gratch,
University of Southern California, USA

Investigates perception of rapport when users interact via avatars in virtual world. Unveils dependencies between components of rapport and informs the design of agents and avatars in computer mediated communication.

PAPER | Video Playdate: Toward Free Play across Distance

Svetlana Yarosh, *Georgia Institute of Technology, USA*
Kori Inkpen, A.J. Brush, *Microsoft Research, USA*

Presents an investigation of remote video-mediated free play between children. Identifies the challenges they faced and design tradeoffs to provide directions for future video-mediated communication systems.

■ PAPER/NOTES | REGENCY 7

INTERACTION TECHNIQUES

SESSION CHAIR: Olivier Chapuis, *University Paris-Sud*

PAPER | Integrating Text with Video and 3D Graphics: The Effects of Text Drawing Styles on Text Readability

Jacek Jankowski, Krystian Samp, Izabela Irzynska,
Marek Jozwowicz, Stefan Decker, *Digital Enterprise Research Institute & National University of Ireland, Ireland*

Presents guidelines for designers of interfaces for games, video, and augmented reality on how best to display readable text on top of 3D and video backgrounds.

NOTE | Apatite: A New Interface for Exploring APIs

Daniel S. Eisenberg, Jeffrey Stylos, Brad A. Myers,
Carnegie Mellon University, USA

Apatite is a new interface for exploring APIs that visualizes associations among items across different levels of an API's hierarchy. Users can search for actions without first choosing classes.

NOTE | Push-and-Pull Switching: Window Switching based on Window Overlapping

Quan Xu, Géry Casiez, *LIFL & INRIA Lille & University of Lille, France*

Presents Push-and-Pull Switching, a new window management technique based on window overlapping to implicitly define groups and switch between these groups using "push and pull" operations.

NOTE | Animated UI Transitions and Perception of Time — a User Study on Animated Effects on a Mobile Screen

Jussi Huhtala, Ari-Heikki Sarjanoja, *Nokia Research Center, Finland*
Jani Mäntyjärvi, Minna Isomursu, *Technical Research Centre of Finland, Finland*
Jonna Häkkilä, *Nokia Research Center, Finland*

A user study concerning the effect of animation on the perception of transition duration on mobile screens. Gives guidelines for UI designers working with mobile devices.

■ **PAPERS | HANOVER CDE**

DRIVING, INTERRUPTED

SESSION CHAIR: Juan Pablo Hourcade, *University of Iowa*

PAPER | Where Should I Turn? Moving from Individual to Collaborative Navigation Strategies to Inform the Interaction Design of Future Navigation Systems

Jodi Forlizzi, *Carnegie Mellon University, USA*
Will Barley, *Northwestern University, USA*
Thomas Seder, *General Motors, USA*

We consider navigation as collaboration rather than map reading activity. We show that collaboration during navigation is influenced by social and task role. We present design implications for future systems.

PAPER | Studying Driver Attention and Behaviour for Three Configurations of GPS Navigation in Real Traffic Driving

Brit Susan Jensen, Mikael B. Skov,
Nissanthen Thiruravichandran, *Aalborg University, Denmark*

Investigates different output modalities (visual, audio, audio-visual) configurations for a GPS navigation system on their impact on driving behavior and driver attention.

PAPER | Cars, Calls and Cognition: Investigating Driving and Divided Attention

Shamsi Iqbal, Yun-Cheng Ju, Eric Horvitz, *Microsoft Research, USA*

Study of interactions between driving complexity, phone conversations and focus. Structural and cognitive properties of driving and conversations are analyzed to understand effects of conflict on performance on both.

■ **TOCHI | HANOVER FG**

INPUT AND DIRECT MANIPULATION

SESSION CHAIR: Shumin Zhai, *IBM Research, Almaden*

TOCHI | Using Direct And Indirect Input Devices: Attention Demands And Age-Related Differences

Anne McLaughlin, *North Carolina State University, USA*
Wendy A. Rogers, Arthur D. Fisk, *Georgia Tech, USA*

The contribution of this paper is a way of thinking about input devices and interfaces in terms of match or mismatch with task attributes and user characteristics.

TOCHI | Shifting The Focus From Accuracy To Recallability: A Study Of Informal Note Taking On Mobile IT

Liwei Dai, *Xerox Corp., USA*
Andrew Sears, Rich Goldman, *UMBC, USA*

Describes an informal note-taking approach that discourages user-initiated error correction and facilitates recall with enhanced notes. Improves the overall efficacy of informal notes and recognition-based text entry using mobile technologies.

TOCHI | Modelcraft: Capturing Freehand Annotations And Edits On 3D Models Using A Digital Pen

Hyunyoung Song, *University of Maryland, USA*
Francois Guimbretière, Hod Lipson, *Cornell University, USA*

Presents a system that interprets interaction with physical models and translates it to 3D digital models to facilitate the work cycle of architects.

TOCHI | Can Direct Manipulation Lower The Barriers To Computer Programming And Promote Transfer Of Training?

Christopher Hundhausen, Sean F. Farley, Jonathan L. Brown, *Washington State University, USA*

Experimental evaluation and video analysis of novices' use of a novel direct manipulation computer programming environment. Illuminates value of direct manipulation in providing a "way in" to programming.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

CHI 2010 USER EXPERIENCE

ORGANIZERS:
Keith Instone, *IBM, USA*
Elizabeth Buie, *Luminanze Consulting, USA*
Susan Dray, *Dray & Associates, USA*
Jhilmil Jain, *HP, USA*
Gitte Lindgaard, *Carleton University, Canada*

Wednesday

= 15 minutes = 30 minutes = unscheduled/ad time

	8:00–8:45	9:00–10:30	11:30–13:00	14:30–16:00	16:30–18:00
Centennial 1		**Social Impact Award** A. Druin and B. Bederson Page 50	**Papers/Case Studies** Interactions in the World Page 54	**Papers** Medical Data Page 58	**Papers/Notes** Remember and Reflect Page 62
Centennial 2	CHI Madness Page 50	**Panel** Managing User Experience... Managing Change Page 50	**Panel** Making Food, Producing Sustainability Page 54	**Paper+Panel** Mapping the Landscape of Sustainable HCI Page 58	**Panel** HCI, Communities and Politics Page 62
Centennial 3		**Papers** Looking with Video Page 50	**Papers/Notes** Using Your Social Network Page 54	**Papers/Notes** Earth, Wind, and Flyer Page 58	**Papers/Notes** Home Eco Behavior Page 62
Centennial 4		**Papers** Privacy Page 50	**Papers/Notes** Classroom Technologies Page 55	**Papers/Notes** Social Media Users Page 58	**Papers/Notes** Sharing in Specific Communities Page 63
Regency 5		**Papers** Expressing and Understanding Opinions in Social Media Page 51	**Papers** Working with Medical Records Page 55	**Papers/Case Studies** Tools Affecting the Enterprise Page 59	**Papers/Notes/Case Studies** On the Phone Page 63
Regency 6		**Papers/Notes** Pixels and Perception Page 51	**Papers** Expertise Page 55	**Papers/Notes** Subtle Expressions Through Sound and Text Page 59	**Papers** Something Eye Catching Page 64
Regency 7		**Papers/Case Studies** Bang a Table Page 51	**Papers/Notes** Sound and Speech Page 56	**Papers/Notes** Bikes and Buses Page 60	**Papers** Therapy and Rehabilitation Page 64
Hanover CDE		**Papers** Storytelling Page 52	**alt.chi** I Need Your Input Page 56	**alt.chi** Imagine all the People Page 60	**Invited Design Activity** Pachube - a Design Activity with Many Hands Page 64
Hanover FG		**Papers/Notes** Humans and Sociability Page 52	**Papers/Notes** Devising Input Page 57	**Papers** Death and Fear Page 60	**TOCHI** Activities, Access Control & Networking Page 65
Chicago ABC		**SIG** How to bring HCI Research and Practice Closer Together Page 53	**SIG** Creating Prosocial Media for Children Page 57	**SIG** End User Software Engineering Page 61	**SIG** Designing User Interfaces for Multi-Touch and Surface-GestureDevices Page 65

Commons/Grand Hall

Exhibits & Info Booth
10:30–18:00

Media Showcase Interactivity Demos
10:30–11:30
13:30–14:30
16:00–16:30

Media Showcase Interactivity Demo
Panel II
14:30–16:00
Commons Stage

Media Showcase Performances Panel II
16:30–18:00
Commons Stage

Special Events

Spotlight on Work-in-Progress Posters (WIP 97-183), Student Design Competition (SDC), and Workshops
10:30–11:30
Commons and Lobby

Media Showcase Performances
11:30–13:00
Commons Stage

SIGCHI Membership Meeting
18:10–19:10
Centennial I

Hospitality Events
18:30–20:30
Georgia Aquarium

CHI MADNESS | CENTENNIAL 2

8:00-8:45

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

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

■ **SIGCHI AWARD INVITED TALK | CENTENNIAL 1**

SESSION CHAIR: Loren Terveen, *University of Minnesota*

SOCIAL IMPACT AWARD RECIPIENTS: Allison Druin and Ben Bederson, *University of Maryland*

(See page 14)

■ **PANEL | CENTENNIAL 2**

MANAGING USER EXPERIENCE...MANAGING CHANGE

PANELISTS:
Carola Thompson, *SAP Labs, LLC, USA*
Richard Anderson, *Independent, USA*
Irene Au, *Google, USA*
Cordell Ratzlaff, *Cisco, USA*
Nida Zada, *Plaxo, Inc., USA*

■ **PAPERS | CENTENNIAL 3**

LOOKING WITH VIDEO

SESSION CHAIR: Dan Olsen, *Brigham Young University*

PAPER | Temporal hybridity: Mixing live video footage with instant replay in real time

Arvid Engstrom , Oskar Juhlin, *Mobility Studio, Interactive Institute, Sweden*
Mark Perry, *Brunel University, UK*
Mathias Broth, *Linköping University, Sweden*

An interaction analysis of instant replay in live sport is presented, showing how the production of real-time video footage is coordinated with historical footage. Design implications are presented.

PAPER | Experience, Adjustment, and Engagement: The Role of Video in Law Enforcement

Joe Tullio, *Motorola, Inc., USA*
Elaine Huang, *University of Calgary, Canada*
David Wheatley, Harry Zhang, Claudia Guerrero, *Motorola, Inc., USA*
Amruta Tamdoo, *University of Illinois, Chicago, USA*

This research describes end-to-end use of ubiquitous video in law enforcement, spanning multiple law enforcement roles, work contexts, and facilities throughout the life cycle of the video.

PAPER | ToolClips: An Investigation of Contextual Video Assistance for Functionality Understanding

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

Investigates ToolClips, interactive video based tool tips that provide users with contextual video assistance. Aids in functionality understanding and can significantly improve task completion rate in comparison to traditional documentation.

■ **PAPERS | CENTENNIAL 4**

PRIVACY

SESSION CHAIR: Kirstie Hawkey, *University of British Columbia*

PAPER | Friends Only: Examining a Privacy-Enhancing Behavior in Facebook

Fred Stutzman, Jacob Kramer-Duffield, *University of North Carolina at Chapel Hill, USA*

Using boundary regulation theories of privacy, this paper explores and identifies factors associated with a privacy enhancing behavior in the social network site Facebook.

PAPER | Moving Beyond Untagging: Photo Privacy in a Tagged World

Andrew Besmer, Heather Richter Lipford, *University of North Carolina at Charlotte, USA*

We examine user concerns of photo tagging on social network sites, discuss design guidelines, and present a new mechanism for improving privacy with tagged photos.

PAPER | Standardizing Privacy Notices: An Online Study of the Nutrition Label Approach

Patrick Gage Kelley, Lucian Cesca, Joanna Bresee, Lorrie Faith Cranor, *Carnegie Mellon University, USA*

Our 764-participant user study shows that well-designed, standardized privacy policy formats can benefit consumers by improving their understanding of a company's practices, shortening reading time, and increasing reader enjoyment.

■ PAPERS | REGENCY 5

EXPRESSING AND UNDERSTANDING OPINIONS IN SOCIAL MEDIA

SESSION CHAIR: Cliff Lampe, *Michigan State University*

PAPER | "America Is Like Metamucil": Fostering Critical and Creative Thinking about Metaphor in Political Blogs

Eric P. S. Baumer, Jordan Sinclair, Bill Tomlinson, *University of California at Irvine, USA*

User study of a tool for blog readers that identifies conceptual metaphors in political blogs. Shows how aspects of computational analysis can effectively support critical and creative thinking about metaphors.

PAPER | Understanding Dispute Resolution Online: Using Text to Reflect Personal and Substantive Issues in Conflict

Matt Billings, Leon Watts, *University of Bath, UK*

Through interviews with online conciliators and qualitative analysis of Wikipedia mediations, we show how conciliators can resolve conflicts positively in a text-based online community by 'mutating' the persistent text.

PAPER | Presenting Diverse Political Opinions: How and How Much

Sean Munson, Paul Resnick, *University of Michigan, USA*

Previous selective exposure research offers competing theories about people's preference for bias in news aggregators. We find individual differences: some people are diversity-seeking while others are challenge-averse.

■ PAPERS/NOTES | REGENCY 6

PIXELS AND PERCEPTION

SESSION CHAIR: Allen Cypher, *IBM*

PAPER | Prefab: Implementing Advanced Behaviors Using Pixel-Based Reverse Engineering of Interface Structure

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

We present Prefab, a system for implementing advanced behaviors through the reverse engineering of the pixels in graphical interfaces.

PAPER | GUI Testing Using Computer Vision

Tsung-Hsiang Chang, *MIT CSAIL, USA*
Tom Yeh, *UMIACS & HCIL, University of Maryland, USA*
Robert Miller, *MIT CSAIL, USA*

Presents an approach to automate GUI testing and a test-by-demonstration system to generate test scripts automatically. Can facilitate unit testing, regression testing, and test-driven development for GUI developers and testers.

NOTE | Faster Progress Bars: Manipulating Perceived Duration with Visual Augmentations

Chris Harrison, Zhiquan Yeo, Scott E. Hudson, *Human-Computer Interaction Institute, Carnegie Mellon University, USA*

Human perception of time is fluid and can be manipulated in purposeful ways. We evaluate two progress bar graphical variations that alter user's perception of duration, making operations "appear" faster.

NOTE | Evaluation of Progressive Image Loading Schemes

Chris Harrison, Anind K. Dey, Scott E. Hudson, *Human-Computer Interaction Institute, Carnegie Mellon University, USA*

We present an empirical evaluation of popular progressive image loading methods. Results suggest a spiral variation of bilinear interlacing can yield an improvement in content recognition time.

■ PAPERS/CASE STUDIES | REGENCY 7

BANG A TABLE

SESSION CHAIR: Dan Morris, *Microsoft Research*

PAPER | Digital Drumming: A Study of Co-located, Highly Coordinated, Dyadic Collaboration

Bobby Beaton, Steve Harrison, Deborah Tatar, *Virginia Tech, USA*

Study used a drumming task to examine coordination techniques between human-human pairings and human-computer pairings. Provides insight to the differences in techniques people use to coordinate when doing creative tasks.

PAPER | G-nome Surfer: a Tabletop Interface for Collaborative Exploration of Genomic Data

Orit Shaer, *Wellesley College, USA*
Guy Kol, *Babson College, USA*
Megan Strait, *Wellesley College, USA*
Chloe Fan, *Carnegie Mellon University, USA*
Catherine Grevet, *Georgia Institute of Technology, USA*
Sarah Elfenbein, *Wellesley College, USA*

Describes existing tasks of biologists working with genomic data and discusses design implications. It then presents a tabletop application that supports these tasks and facilitates collaborative exploration of genomic data.

CASE STUDY | Using Metaphors to Create a Natural User Interface for Microsoft Surface

Kay Hofmeester, Dennis Wixon, *Microsoft, USA*

Using metaphors to design and research a new touch interface for Microsoft Surface. This method can provide guidance to design new interfaces that are understandable and predictable to users.

■ PAPERS | HANOVER CDE

STORYTELLING

SESSION CHAIR: Wendy Kellogg, *IBM*

PAPER | Family Story Play: Reading with Young Children (and Elmo) Over a Distance

Hayes Raffle, Rafael "Tico" Ballagas, *Nokia Research Center, USA*
Glenda Revelle, *Joan Ganz Cooney Center at Sesame Workshop, USA*
Hiroshi Horii, *Nokia Research Center, USA*
Sean Follmer, *MIT Media Lab, USA*
Janet Go, *Nokia Research Center, USA*
Emily Reardon, *Sesame Workshop, USA*
Koichi Mori, Joseph "Jofish" Kaye, Mirjana Spasojevic, *Nokia Research Center, USA*

Family Story Play allows grandparents to read books together with their grandchildren over video conference. The system improves long-distance communication and encourages activities linked to literacy development.

PAPER | Designing with Mobile Digital Storytelling in Rural Africa

Nicola J Bidwell, *UCT Centre in ICT4D & James Cook University, South Africa*
Thomas Reitmaier, Gary Marsden, *UCT Centre in ICT4D, South Africa*
Susan Hansen, *University of Technology Sydney & CSIRO ICT Centre, Australia*

Our engagement with a rural African community to design a novel application for the cellphone contributes new perspectives on digital storytelling and to generating empathy in HCI4D.

PAPER | Let's Play Chinese Characters - Mobile Learning Approaches via Culturally Inspired Group Games

Feng Tian, Fei Lv, *Institute of Software, Chinese Academy of Sciences, China*
Jingtao Wang, *University of California at Berkeley, U.S.A*
Hongan Wang, Wencan Luo, *Institute of Software, Chinese Academy of Sciences, China*
Matthew Kam, *Carnegie Mellon University, U.S.A*
Vidya Setlur, *Nokia Research Palo Alto, U.S.A*
Guozhong Dai, *Institute of Software, Chinese Academy of Sciences, China*
John Canny, *University of California at Berkeley, U.S.A*

Design two mobile learning games, Multimedia Word and Drumming Strokes, based on analysis of 25 traditional Chinese group games. Intend to improve children's Chinese language skills through group playing activities.

■ PAPERS/NOTES | HANOVER FG

HUMANS AND SOCIABILITY

SESSION CHAIR: Rick Wash, *Michigan State University*

NOTE | Propitious Aggregation: Reducing Participant Burden in Ego-centric Network Data Collection

Derek Lackaff, *University of Texas at Austin, USA*

Experiment tests interactive social network data collection process using online instrument integrated with participants' social network site (Facebook) network. Technique reduces burdens of time and effort placed upon research participants.

NOTE | Trying Too Hard? Effects of Mobile Agents' (Inappropriate) Social Expressiveness on Trust, Affect and Compliance.

Henriette Cramer, *University of Amsterdam, Mobile Life Centre & SICS, Sweden*
Vanessa Evers, Tim van Slooten, Mattijs Ghijsen, Bob Wielinga, *University of Amsterdam, The Netherlands*

Inappropriate social expressiveness can have serious consequences. This paper elaborates on potential design pitfalls based on negative results of less-than-ideal behaviour in a Wizard-of-Oz experiment with a mobile agent.

PAPER | A Simple Index for Multimodal Flexibility

Antti Oulasvirta, Joanna Bergstrom-Lehtovirta, *Helsinki Institute for Information Technology HIIT, Finland*

Presents a method to quantify the flexibility with which users can allocate their exteroceptive senses away from the interactive task.

PAPER | Social Gravity: A Virtual Elastic Tether for Casual, Privacy-Preserving Pedestrian Rendezvous

John Williamson, *University of Glasgow, UK*
Simon Robinson, *Swansea University, UK*
Craig Stewart, Rod Murray-Smith, *University of Glasgow, UK*
Matt Jones, *Swansea University, UK*
Stephen Brewster, *University of Glasgow, UK*

We demonstrate a geolocated mobile meetup system which preserves privacy and needs no visual attention, and present a detailed experiment showing the practicality of the interaction.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

HOW TO BRING HCI RESEARCH AND PRACTICE CLOSER TOGETHER

ORGANIZERS:
Keith Instone, *IBM, USA*
Elizabeth Buie, *Luminanze Consulting, USA*
Susan Dray, *Dray & Associates, USA*
Jhilmil Jain, *HP, USA*
Gitte Lindgaard, *Carleton University, Canada*
Arnie Lund, *Microsoft, USA*

■ PAPERS/CASE STUDY | CENTENNIAL 1

INTERACTIONS IN THE WORLD

SESSION CHAIR: Volker Wulf, *University of Siegen*

PAPER | An Empirical Task Analysis of Warehouse Order Picking Using Head-Mounted Displays

Kimberly A. Weaver, *Georgia Institute of Technology, USA*
Hannes Baumann, *TZI, Universität Bremen, Germany*
Thad Starner, *Georgia Institute of Technology, USA*
Hendrick Iben, Michael Lawo, *TZI, Universität Bremen, Germany*

We present an empirically grounded study using task guidance systems in an ecologically motivated environment to understand the advantages of an HMD-based system over current warehouse order picking methods.

PAPER | Where is my Team? Supporting Collaboration and Situation Awareness with Tactile Displays

Martin Pielot, *OFFIS Institute for Information Technology, USA*
Oliver Krull, Susanne Boll, *University of Oldenburg, Germany*

This paper investigates encoding spatial locations (direction + distance) of several people with tactile torso displays and shows that this can improve situation awareness in situations with high cognitive workload.

CASE STUDY | Designing An Advanced Visualization System for Geological Core Drilling Expeditions

Yu-Chung Chen, Sangyoon Lee, HyeJung Hur, Jason Leigh, Andrew Johnson, Luc Renambot, *University of Illinois at Chicago, USA*

Case study of the design process of a scalable visualization system for a domain with high knowledge barrier. It can assist designers/developers in understanding the population with similar properties.

■ PANEL | CENTENNIAL 2

MAKING FOOD, PRODUCING SUSTAINABILITY

PANELISTS:
Tad Hirsch, *Intel labs, USA*
Phoebe Sengers, *Cornell University, USA*
Eli Blevis, *Indiana University at Bloomington, USA*
Richard Beckwith, *Intel labs, USA*
Tapan Parikh, *University of California at Berkeley, USA*

Panel discussion of sustainable CHI in the context of small-scale food producers. Will suggest areas for new sustainable CHI research.

■ PAPERS/NOTE | CENTENNIAL 3

USING YOUR SOCIAL NETWORK

SESSION CHAIR: Jeff Hancock, *Cornell University*

PAPER | What Do People Ask Their Social Networks, and Why? A Survey Study of Status Message Q&A Behavior

Meredith Ringel Morris, Jaime Teevan, *Microsoft Research, USA*
Katrina Panovich, *Massachusetts Institute of Technology, USA*

Explores the phenomenon of using social network status messages to ask questions, including the frequency of the behavior, the question types and topics, and people's motivation for asking and answering.

NOTE | Affirming the self through online profiles: Beneficial effects of social networking websites

Catalina Toma, *Cornell University, USA*

Social networking sites enable users to create flattering profiles and to amass social connections. This paper argues that reviewing this positive representation of the self has self-affirming benefits, in that it makes users more secure and open-minded.

NOTE | Improving Social Game Engagement on Facebook through Enhanced Socio-Contextual Information

Ben Kirman, Shaun Lawson, Conor Linehan, *University of Lincoln, UK*
Francesco Martino, Luciano Gamberini, *University of Padova, Italy*
Andrea Gaggioli, *Istituto Auxologico Italiano, Italy*

Describes a controlled study of a Facebook application with socio-contextual enhancements. Findings confirm that enhanced social information increases engagement in social games.

PAPER | The Role of Community and Groupware in Geocache Creation and Maintenance

Carman Neustaedter, *Kodak Research Labs, USA*
Anthony Tang, *University of British Columbia, Canada*
Tejinder K. Judge, *Virginia Tech, USA*

Describes a study of geocaching. Results outline the importance of community and groupware for content generation and maintenance in location-based experiences.

■ **PAPERS | CENTENNIAL 4**

CLASSROOM TECHNOLOGIES

SESSION CHAIR: Allison Druin, *University of Maryland*

PAPER | Expressive Robots in Education

Martin Saerbeck, *Eindhoven University of Technology, Netherlands*
Tom Schut, *Philips Research, The Netherlands*
Christoph Bartneck, *Eindhoven University of Technology, Netherlands*
Maddy D. Janse, *Philips Research, Netherlands*

Varies the perceived social supportiveness of a robotic tutor in the five dimensions role model, nonverbal feedback, attention guiding, empathy and communicativeness. Benefits are demonstrated in an educational application.

PAPER | Exploring Affective Technologies for the Classroom with the Subtle Stone

Madeline Balaam, *University of Sussex, UK*
Geraldine Fitzpatrick, *Vienna University of Technology, Austria*
Judith Good, *University of Sussex, UK*
Rosemary Luckin, *London Knowledge Lab, UK*

Presents a user study exploring the role of tangible affective technologies in the classroom. Can assist designers in creating technologies to better support emotions within this setting.

PAPER | vSked: Evaluation of a System to Support Classroom Activities for Children with Autism

Sen H. Hirano, Michael T. Yeganyan, *University of California at Irvine, USA*
Gabriela Marcu, *Carnegie Mellon University, USA*
David H. Nguyen, *University of California at Irvine, USA*
Lou Anne Boyd, *Orange County Department of Education, USA*
Gillian R. Hayes, *University of California at Irvine, USA*

Describes vSked, an interactive and collaborative visual scheduling system, and the results from its deployment in an autism-specific classroom. Can help designers exploring interactive technologies in special education settings.

■ **PAPERS | REGENCY 5**

WORKING WITH MEDICAL RECORDS

SESSION CHAIR: Geraldine Fitzpatrick, *University of Vienna*

PAPER | Doctors and Psychosocial Information: Records and Reuse in Inpatient Care

Xiaomu Zhou, Mark Ackerman, Kai Zheng, *University of Michigan, USA*

This study shows that doctors' use of psychosocial information in electronic patient records could be substantially improved. We offer design suggestions for EHRs and a new approach towards medical representations.

PAPER | Supporting Coordination in Surgical Suites: Physical Aspects of Common Information Spaces

Peter G. Scupelli, *Carnegie Mellon University, USA*
Yan Xiao, *Baylor Health Care System, USA*
Susan R. Fussell, *Cornell University, USA*
Sara Kiesler, Mark D. Gross, *Carnegie Mellon University,USA*

Presents a field study of how the physical environment and the positioning of information displays affect OR staff coordination; provides design principles for positioning large displays within the physical environment.

PAPER | Documenting Transitional Information in EMR

Yunan Chen, *University of California at Irvine, USA*

The findings of this study call for designing EMR system not only for keeping patients' formal records, but also for documenting transitional information in the chart-writing process.

■ **PAPERS | REGENCY 6**

EXPERTISE

SESSION CHAIR: Sadat Shami, *IBM*

PAPER | How Power Users Help and Hinder Open Bug Reporting

Andrew J. Ko, Parmit K. Chilana, *University of Washington, USA*

Analyzes the success of various types of contributors to the Mozilla bug database. Results suggest that most reports were duplicates, narrow expert feature requests, or end-user technical support.

PAPER | Bringing the field into focus: User-centered design of a patient expertise locator

Andrea Civan-Hartzler, David W. McDonald, Chris Powell, Meredith M. Skeels, Marlee Mukai, Wanda Pratt, *University of Washington, USA*

Describes iterative design of expertise locator for patients to find peers for health advice. Design groups, informed by fieldwork, enrich our understanding of supporting trade-offs when sharing sensitive health information.

PAPER | What Do You Know? Experts, Novices and Territoriality in Collaborative Systems

Jennifer Thom-Santelli, *IBM TJ Watson Research, USA*
Dan R. Cosley, Geri Gay, *Cornell University, USA*

Describes how experts express territoriality, behaviors communicating ownership, in an online space. Can assist designers in managing these naturally occurring expressions so they have a beneficial influence on collaborative activity.

■ **PAPERS/NOTES | REGENCY 7**

SOUND AND SPEECH

SESSION CHAIR: Khai Troung, *University of Toronto*

PAPER | Clutching at Straws: Using Tangible Interaction to Provide Non-Visual Access to Graphs

David McGookin, Euan Robertson, Stephen Brewster, *University of Glasgow, UK*

Investigates the application of tangible user interfaces to non-visual interaction scenarios for graph and chart access. Provides guidelines and requirements for future non-visual tangible interaction research.

PAPER | Effects of Automated Transcription Quality on Non-native Speakers' Comprehension in Real-time Computer-mediated Communication

Yingxin Pan, *IBM Research, China*
Danning Jiang, *IBM Research- China, USA*
Lin Yao, *Chinese Academy Institute, China*
Michael Picheny, *IBM Research - Watson, USA*
Yong Qin, *IBM Research, China*

Experimental studies investigating the use of automated speech recognition (ASR) in computer-mediated communication to improve non-native speakers' comprehension. Reveals user-centered benchmarks at the current cutting edge of ASR technology.

NOTE | Understanding the Impact of Abstracted Audio Preview of SMS

Alireza Sahami Shirazi, *University of Duisburg-Essen, Germany*
Ari-Heikki Sarjanoja, *Nokia Research Center, Finland*
Florian Alt, Albrecht Schmidt, *University of Duisburg-Essen, Germany*
Jonna Häkkilä, *Nokia Research Center, Finland*

Introduces the concept of audio previews of SMS by real-time analyzing of a message's content and providing auditory cues in addition to the notification tone upon receiving an SMS.

■ **alt.chi | HANOVER CDE**

I NEED YOUR INPUT

SESSION CHAIR: Roel Vertegaal, *Queens University Onterio*

alt.chi | Tangible Interfaces for Download: Initial Observations from Users' Everyday Environments

Enrico Costanza, *EPFL Media and Design Lab, Switzerland & University of Southampton, UK*
Matteo Giaccone, *EPFL Media and Design Lab, Switzerland & WeLaika, Italy*
Olivier Kueng, *EPFL Media and Design Lab, Switzerland*
Simon Shelley, *TU Eindoven, The Netherlands*
Jeffrey Huang, *EPFL Media and Design Lab, Switzerland*

alt.chi | Tangible Video Bubbles

Kimiko Ryokai, *University of California at Berkeley, USA*
Hayes Raffle, Hiroshii Horii, *Nokia Research Center Palo Alto, USA*
Yotam Mann, *University of California at Berkeley, USA*

alt.chi | Adaptive Mouse: A Deformable Computer Mouse Achieving Form-Function Synchronization

Sheng Kai Tang, *Mechanical & Industrial Design Center, ASUSTek Computer Inc., Taiwan*
Wen Yen Tang, *Kun Shan University, Taiwan*

alt.chi | Manual Deskterity : An Exploration of Simultaneous Pen + Touch Direct Input

Ken Hinckley, *Microsoft Research, USA*
Koji Yatani, *Microsoft Research, USA & University of Toronto, Canada*
Michel Pahud, *Microsoft Research, USA*
Nicole Coddington, Jenny Rodenhouse, *Microsoft Corporation, USA*
Hrvoje Benko, Andy Wilson, Bill Buxton, *Microsoft Research, USA*

alt.chi | Planz to Put Our Digital Information in its Place

William Jones, Dawei Hou, *University of Washington, USA*
Bhuricha Deen Sethanandha, *Portland State University, USA*
Eric Sheng Bi, *University of Washington, USA*
Jim Gemmell, *Microsoft Research, USA*

alt.chi | Only One Fitts' Law Formula - Please!

Heiko Drewes, *University of Munich, Germany*

■ **PAPER/NOTES | HANOVER FG**

DEVISING INPUT

SESSION CHAIR: Jan Borchers, *University of Aachen*

NOTE | Comparing User Performance with Single-Finger, Whole-Hand, and Hybrid Pointing Devices

Xiang Cao, Nicolas Villar, Shahram Izadi, *Microsoft Research Cambridge, UK*

We experimentally compared single-finger and whole-hand pointing devices with hybrid devices that combined the movement of both, and showed hybrid devices can potentially improve pointing performance especially for precise pointing.

PAPER | How Users Manipulate Deformable Displays as Input Devices

Sang-Su Lee, Sohyun Kim, Bopil Jin, Eunji Choi, Boa Kim, Xu Jia, Daeeop Kim, Kun-pyo Lee, *KAIST, Korea*

This user study is aimed at understanding deformation-based user gestures without considering current technical limitations by observing users interacting with artificial deformable displays with various levels of flexibility.

NOTE | Cord Input: An Intuitive, High-Accuracy, Multi-Degree-of-Freedom Input Method for Mobile Devices

Julia Schwarz, Chris Harrison, Scott Hudson, Jennifer Mankoff, *Carnegie Mellon University, USA*

We present a cord-based sensor which senses along three input dimensions. This device could be integrated into headphones, backpacks, and clothing to control mobile devices in an eyes-free manner.

NOTE | Minput: Enabling Interaction on Small Mobile Devices with High-Precision, Low-Cost, Multipoint Optical Tracking

Chris Harrison, Scott E. Hudson, *Human-Computer Interaction Institute, Carnegie Mellon University, USA*

Minput is a sensing and input method that enables intuitive and accurate interaction on small devices, ones too small for practical touchscreen use and with limited space for physical buttons.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

CREATING PROSOCIAL MEDIA FOR CHILDREN

ORGANIZERS:
Glenda Revelle, *University of Arkansas, USA*
Ashley Fenwick-Naditch, *Sesame Workshop, USA*
Liz Kronenberger, Xeko, *USA*
Makeda Mays Green, *Sesame Workshop, USA*

■ **PAPERS | CENTENNIAL 1**

MEDICAL DATA

SESSION CHAIR: John Canny, *University of California Berkeley*

PAPER | Physician-Driven Management of Patient Progress Notes in an Intensive Care Unit

Lauren Wilcox, *Columbia University & IBM Watson, USA*
Jie Lu, Jennifer Lai, *IBM Watson, USA*
Steven Feiner, Desmond Jordan, *Columbia University, USA*

Our multi-phase design process explored techniques for inserting and managing progress note content. We gained preliminary confirmation that tagging and note-driven information retrieval are desired by physicians in two ICUs.

PAPER | Mobile-izing Health Workers in Rural India

Divya Ramachandran, John Canny, *University of California at Berkeley, USA*
Prabhu Dutta Das, *Dhirubhai Ambani Institute of Information and Communications Technology, India*
Edward Cutrell, *Microsoft Research India, India*

Rural health workers face challenges in effectively performing their responsibilities. We evaluate the use of mobile videos to motivate health workers to persuade their clients to utilize health services.

PAPER | "Who's Scribing?" Documenting Patient Encounter during Trauma Resuscitation

Aleksandra Sarcevic, *Rutgers University, USA*

Observational study in a trauma center revealed limitations of the documentation process and highlighted roles of the nurse recorder. Challenges to transforming paper-based documentation practices into digital ones are discussed.

■ **PAPER + PANEL | CENTENNIAL 2**

MAPPING THE LANDSCAPE OF SUSTAINABLE HCI

PANELISTS:
Carl DiSalvo, *Georgia Tech, USA*
Phoebe Sengers, *Cornell University, USA*
Hrönn Brynjarsdóttir, *Cornell University, USA*
Paul Dourish, *University of California, Irvine, USA*
James Landay, *University of Washington, USA*
Elizabeth Goodman, *University of California Berkeley, USA*

PANEL | Mapping the Landscape of Sustainable HCI

Carl DiSalvo, Georgia Tech, USA
Pheobe Sengers, Hrönn Brynjarsdóttir, Cornell University, USA

In this paper we map out the approaches being taken and the intellectual commitments that underlie sustainable HCI, to allow for community discussion about where the field should go.

■ **PAPERS/NOTES | CENTENNIAL 3**

EARTH, WIND, AND FLYER

SESSION CHAIR: Gilbert Cockton, *Northumbria University*

PAPER | UpStream: Motivating Water Conservation with Low-Cost Water Flow Sensing and Persuasive Displays

Stacey Kuznetsov, Eric Paulos, *Carnegie Mellon University, USA*

We explore the design and deployment of pervasive displays as an approach for promoting sustainable water use and health practices in public and private spaces.

PAPER | inAir: Sharing Indoor Air Quality Measurements and Visualizations

Sunyoung Kim, Eric Paulos, *Carnegie Mellon University, USA*

Describes a tool for sharing measurements and visualizations of indoor air quality within one's social network to increase awareness and to promote behavioral changes for improved air quality, and to demonstrate the persuasive power of sharing

NOTE | Exploring Sustainable Design with Reusable Paper

Julie Wagner, *LRI & INRIA, France*
Wendy E. Mackay, *INRIA, France*

After investigating users' printing behavior, we explored how reusable paper can support sustainable design. We found that users often need an intermediate state between electronic and physical forms of paper.

NOTE | Finding the Lost Treasure: Understanding Reuse of Used Computing Devices

Jina Huh, Kevin Nam, Nikhil Sharma, *University of Michigan, USA*

This paper contributes to sustainable interaction design, more specifically, reuse, by understanding adoption practices of old PDAs in ebay users.

■ **PAPERS/NOTES | CENTENNIAL 4**

SOCIAL MEDIA USERS

SESSION CHAIR: Laura Dabbish, *Carnegie Mellon University*

NOTE | Social Network Activity and Social Well-Being

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

An empirical analysis of the relationship between direct and passive communication on Facebook and social well-being, including loneliness, bridging, and bonding social capital.

NOTE | Predicting Influence in an Online Community of Creators

Elisabeth Sylvan, *TERC, USA*

Introduces and frames the concept of Online Communities of Creators (social networks for sharing personal, original work.) Reports on factors that predict two distinct constructs: project influence and social influence.

PAPER | Lurking? Cyclopaths? A Quantitative Lifecycle Analysis of User Behavior in a Geowiki

Katherine Panciera, Reid Priedhorsky, *University of Minnesota, USA*
Thomas Erickson, *IBM, USA*
Loren Terveen, *University of Minnesota, USA*

Presents data analysis from a geowiki (Cyclopath) of user lifecycles, including pre-registration activity. Explores parallels with other open-content systems as well as design implications.

PAPER | Motivations to Participate in Online Communities

Cliff Lampe, Rick Wash, Alcides Velasquez, Elif Ozkaya, *Michigan State University, USA*

Compares individual versus group motivations of both anonymous and registered users to participate in an online community. Provides survey and server data to show how motivations affects participation.

■ **PAPERS/CASE STUDY | REGENCY 5**

TOOLS AFFECTING THE ENTERPRISE

SESSION CHAIR: Emilee Rader, *Northwestern University*

PAPER | Detecting Professional versus Personal Closeness Using an Enterprise Social Network Site

Anna Wu, *Pennsylvania State University, USA*
Joan M. DiMicco, David R. Millen, *IBM Research, USA*

This work presents a model for predicting professional versus personal closeness from behavior on a corporate social network site, demonstrating that individuals express relationship multiplexity in their online interactions.

PAPER | Lessons Learned from Blog Muse: Audience-based Inspiration for Bloggers

Casey Dugan, Werner Geyer, David R. Millen, *IBM T.J. Watson Research, USA*

Describes evaluation of a system whose goal is to inspire potential blog writers by connecting them with their audience through a topic-suggestion approach. Topics requested by users are most effective.

CASE STUDY | Factors Impeding Wiki Use in the Enterprise: A Case Study

Lester Holtzblatt, Laurie Damianos, Daniel Weiss, *MITRE Corporation, USA*

The benefits organizations derive from wikis ultimately depend on user adoption. Our research identifies factors that impede wiki use in the enterprise and proposes strategies which address these barriers.

■ **PAPER/NOTES | REGENCY 6**

SUBTLE EXPRESSIONS THROUGH SOUND AND TEXT

SESSION CHAIR:
John Zimmerman, *Carnegie Mellon University*

NOTE | Motivating Expressive Writing with a Text-to-Sound Application

Amy Gonzales, Tiffany Ng, OJ Zhao, Geri Gay, *Cornell University, USA*

The study finds that a system that translates expressive writing text into music increases enjoyment and may motivate expressive writing, which is linked to improvements in mental and physical health.

NOTE | Artificial Subtle Expressions: Intuitive Notification Methodology of Artifacts

Takanori Komatsu, *Shinshu University, Japan*
Seiji Yamada, *National Institute of Informatics, Japan*
Kazuki Kobayashi, *Shinshu University, Japan*
Kotaro Funakoshi, Mikio Nakano, *HRIJ, Japan*

Artificial subtle expressions (ASEs), simple and low-cost expressions like beeping sounds or blinking LEDs, could convey the internal states of artifacts to users like paralinguistic or nonverbal information.

PAPER | SoundNet: Investigating a Language Composed of Environmental Sounds

Xiaojuan Ma, Christiane Fellbaum, Perry Cook, *Princeton University, USA*

This paper explores the efficacy of environmental sounds for conveying concepts to assist communication across language barriers. Details, issues, and results of online studies employing anonymous human participants are presented.

■ **PAPERS/NOTE | REGENCY 7**

BIKES AND BUSES

SESSION CHAIR: Duncan Rowland, *University of Nottingham*

PAPER | Understanding the space for co-design in riders' interactions with a transit service

Daisy Yoo, John Zimmerman, Aaron Steinfeld, Anthony Tomasic, *Carnegie Mellon University, USA*

The project explores the key challenges of creating co-design of public services using web 2.0. Investigating the service of local public transit, we integrate service design methods with HCI.

PAPER | OneBusAway: Results from Providing Real-Time Arrival Information for Public Transit

Brian Ferris, Kari Watkins, Alan Borning, *University of Washington, USA*

Describes OneBusAway, which provides real-time transit arrival information, particularly on mobile devices. Presents survey results showing positive effects on user satisfaction, waiting time, transit usage, feelings of safety, and walking.

NOTE | Biketastic: Sensing and Mapping for Better Biking

Sasank Reddy, Katie Shilton, Gleb Denisov, Christian Cenizal, Deborah Estrin, Mani Srivastava, *University of California at Los Angeles, USA*

Describes a mobile phone platform that enables individuals to log geo-data about their bike routes. Presents visualization techniques and inference algorithms to enhance browsing and learning from routes.

■ **alt.chi | HANOVER CDE**

IMAGINE ALL THE PEOPLE

SESSION CHAIR: Tovi Grossman, *Autodesk Research*

alt.chi | Edits & Credits: Exploring Integration and Attribution in Online Creative Collaboration

Kurt Luther, *Georgia Institute of Technology, USA*
Nicholas Diakopoulos, *Rutgers University, USA*
Amy Bruckman, *Georgia Institute of Technology, USA*

alt.chi | Multi-lifespan Information System Design in Post-Conflict Societies: An Evolving Project in Rwanda

Batya Friedman, *University of Washington, USA*
Lisa P. Nathan, *University of British Columbia, Canada*
Milli Lake, Nell Carden Grey, Trond T. Nilsen, *University of Washington, USA*
Robert F. Utter, Elizabeth J. Utter, *USA*
Mark Ring, *University of Washington, USA*
Zoe Kahn, *Roosevelt High School, USA*

alt.chi | Cross Currents: Water Scarcity and Sustainable CHI

Tad Hirsch, Ken Anderson, *Intel labs, USA*

Connect 2 Congress: Visual Analytics for Civic Oversight

Peter Kinnaird, Mario Romero, Gregory Abowd, *Georgia Institute of Technology, USA*

alt.chi | Who are the Crowdworkers? Shifting Demographics in Mechanical Turk

Joel Ross, Lilly Irani, M. Six Silberman, Andrew Zaldivar, Bill Tomlinson, *University of California at Irvine, USA*

alt.chi | Public Issues on Projected User Interface

Ju-Chun Ko, Li-Wei Chan, Yi-Ping Hung, *National Taiwan University, Graduate Institute of Networking and Multimedia, Taiwan*

■ **PAPERS | HANOVER FG**

DEATH AND FEAR

SESSION CHAIR: Janet Vertesi, *University of California Irvine*

PAPER | A Death in the Family: Opportunities for Designing Technologies for the Bereaved

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

Presents a web survey and interview study of the how bereaved people inherit and use personal technologies. Identifies design directions and opportunities for this population.

PAPER | Passing On & Putting To Rest: Understanding Bereavement in the Context of Interactive Technologies

William Odom, *Carnegie Mellon University, USA*
Richard Harper, Abigail Sellen, *Microsoft Research Cambridge, UK*
David Kirk, *University of Nottingham, UK*
Richard Banks, *Microsoft Research Cambridge, UK*

We report field evidence from interviews with bereaved participants and discuss how the HCI design space might be better sensitized to the social processes that unfold when bereavement occurs.

PAPER | Fear and the City - Role of Mobile Services in Harnessing Safety and Security in Urban Use Contexts

Jan Blom, *Nokia Research Center, Lausanne, Switzerland*
Divya Viswanathan, *Nokia Research Center, Bangalore, India*
Janet Go, Mirjana Spasojevic, *Nokia Research Center, Palo Alto, USA*
Karthikeya Acharya, Robert Ahonius, *Nokia Research Center, Bangalore, India*

This paper describes research focusing on perception of fear in urban context. Through presenting security service concept, it also acknowledges the potential of mobile services in reducing such feelings.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

END USER SOFTWARE ENGINEERING: CHI 2010 SPECIAL INTEREST GROUP MEETING

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

■ PAPERS/NOTES | CENTENNIAL 1

REMEMBER AND REFLECT

SESSION CHAIR: Kristina Höök, *SICS*

PAPER | Pensieve: Supporting Everyday Reminiscence

S. Tejaswi Peesapati, Victoria Schwanda, Johnathon Schultz, Matt Lepage, So-yae Jeong, Dan Cosley, *Cornell University, USA*

Presents a design rationale, two systems for supporting reminiscence using social media, and a successful five-month, 160 person field deployment that illuminates design and research issues around technology and reminiscence.

NOTE | Involving Reflective Users in Design

Paula M. Bach, Michael Twidale, *University of Illinois, USA*

NOTE | Designing Games for Learning: Insights from Conversations with Designers

Katherine Isbister, *NYU-Poly, USA*
Mary Flanagan, *Dartmouth College, USA*
Chelsea Hash, *NYU-Poly, USA*

This paper presents insights about designing effective and fun games for learning, gleaned from interviews with experienced game developers. Results may be of interest to designers of game-like experiences, also.

PAPER | Now Let Me See Where I Was: Understanding How Lifelogs Mediate Memory

Vaiva Kalnikaite, *The University of Sheffield, UK*
Abigail Sellen, *Microsoft Research Cambridge, UK*
Steve Whittaker, *IBM Research Almaden, USA*
David Kirk, *The University of Nottingham, UK*

A field study examining how and why different types of Lifelogs help remember past events or in contrast, support inferential processing in memory. Can assist in developing effective memory aids.

■ PANEL | CENTENNIAL 2

HCI, COMMUNITIES AND POLITICS

PANELISTS:
Carl DiSalvo, *Georgia Institute of Technology, USA*
Ann Light, *Sheffield Hallam University, UK*
Tad Hirsch, *Intel, USA*
Christopher A. Le Dantec, *Georgia Institute of Technology, USA*
Katie Hill, *Leeds Metropolitan University, UK*
Elizabeth Goodman, *University of California, Berkeley, USA*

This panel juxtaposes several community-based HCI projects in which politics have been a significant factor and asks "How do we address the politics inherent in community-based HCI research?"

■ PAPERS/NOTE | CENTENNIAL 3

HOME ECO BEHAVIOR

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

PAPER | Home, Habits, and Energy: Examining Domestic Interactions and Energy Consumption

James Pierce, *Palo Alto Research Center (PARC) &HCI Institute, Carnegie Mellon University, USA*
Diane J. Schiano, *Search and Advertising Metrics & Analysis (SAMA) & Yahoo!, Inc. & Palo Alto Research Center (PARC), USA*
Eric Paulos, *HCI Institute, Carnegie Mellon University, USA*

Qualitative study of domestic interactions with energy-consuming products and systems. Contributes a framework and strategies informing the design of more energy-conserving interactions as a matter of sustainable interaction design.

NOTE | Studying Always-On Electricity Feedback in the Home

Yann Riche, *Riche Design, USA*
Jonathan Dodge, Ronald A. Metoyer, *Oregon State University, USA*

We present participatory design studies and resulting implications for an always-on feedback device intended to inform consumers of their electricity consumption habits and enable sustainable consumption behavior change.

PAPER | The Design of Eco-Feedback Technology

Jon Froehlich, Leah Findlater, James Landay, *University of Washington, USA*

Eco-feedback technology extends back to the origins of environmental psychology. This paper surveys HCI and environmental psychology literature to define the role of HCI in designing and evaluating eco-feedback technology.

■ PAPERS/NOTES | CENTENNIAL 4

SHARING IN SPECIFIC COMMUNITIES

SESSION CHAIR: Jofish Kaye, *Nokia*

PAPER | The Prayer Companion: Openness and Specificity, Materiality and Spirituality

William Gaver, Goldsmiths, *University of London, UK*
Mark Blythe, *University of York, UK*
Andy Boucher, Goldsmiths, *University of London, UK*
Nadine Jarvis, John Bowers, Goldsmiths, *University of London, UK*
Peter Wright, *Sheffield Hallam University, UK*

Describes the design and long-term deployment of a networked device that provides resources for cloistered nuns' prayers. Illustrates general issues for interaction design, applied here to older people and spirituality.

PAPER | What's Your Idea? A Case Study of a Grassroots Innovation Pipeline within a Large Software Company

Brian Bailey, *University of Illinois & Microsoft Research , USA*
Eric Horvitz, *Microsoft Research, USA*

Provides recommendations and insights for improving the design of idea management systems and execution of grassroots innovation pipelines within large organizations.

NOTE | ASL-STEM Forum: Enabling Sign Language to Grow Through Online Collaboration

Anna C. Cavender, Daniel S. Otero, *University of Washington, USA*
Jeffrey P. Bigham, *University of Rochester, USA*
Richard E. Ladner, *University of Washington, USA*

ASL-STEM Forum is an online, collaborative, video forum for sharing and discussing ASL signs. Initial studies shows viability and lessons in accommodating varying user types, from lurkers to advanced contributors.

NOTE | Curator: A Game with a Purpose for Collection Recommendation

Greg Walsh, Jennifer Golbeck, *University of Maryland, USA*

Curator is a game with a purpose that supports gathering information about collections of items that work well together. Presents a prototype game and discusses applications to collection recommender systems.

■ **PAPER/NOTES/CASE STUDY | REGENCY 5**

ON THE PHONE

SESSION CHAIR: Jason Alexander, *University of Bristol*

PAPER | Mobile Taskflow in Context: A Screenshot Study of Smartphone Usage

Amy K. Karlson, Shamsi T. Iqbal, Brian Meyers, *Microsoft Research, USA*
Gonzalo Ramos, Kathy Lee, *Microsoft, USA*
John C. Tang, *Microsoft Research, USA*

Characterizes barriers in task completion that mobile device users encounter. We provide findings and design recommendations from a large scale survey and focused diary study for improving mobile taskflow.

NOTE | An Adaptive Speed-Call List Algorithm and Its Evaluation with ESM

Seunghwan Lee, Jungsuk Seo, Geehyuk Lee, *Korea Advanced Institute of Science and Technology, Korea*

Describes an algorithm for generating a speed-call list based on temporal calling patterns that was motivated by user survey, validated by unseen call logs, and evaluated by an ESM study.

NOTE | Evaluation of Text Entry Methods for Korean Mobile Phones, a User Study

Ivaylo Ilinkin, Sunghee Kim, *Gettysburg College, USA*

This paper reports an evaluation of Korean text entry methods for mobile-phones based on KSPC, WPM, and error rate. A phrase set that has high correlation with Korean is introduced.

CASE STUDY | Contacts 3.0: Bringing together research and design teams to reinvent the phonebook

Frank Bentley, *Motorola Applied Research, USA*
Rafiq Ahmed, JoEllen Kames, Lauren Schwendimann, Rhiannon Zivin, *Motorola Mobile Devices, USA*

This Case Study explores a joint project between research and product teams to create a social network-enabled mobile contacts platform. Can provide suggestions for successful corporate research transfer.

■ **PAPERS | REGENCY 6**

SOMETHING EYE CATCHING

SESSION CHAIR: Jacob Biehl, *FXPAL*

PAPER | Modeling Dwell-Based Eye Pointing Target Acquisition

Xinyong Zhang, *Renmin University of China, Peking University, Beijing Institute of Technology, China*
Xiangshi Ren, *Kochi University of Technology, Japan*
Hongbin Zha, *Peking University, China*

Contributes a quantitative model for eye pointing using dwell time. Provides some implications for the designs of gaze input interfaces and a means for the comparison of gaze input devices.

PAPER | Gazemarks - Gaze-Based Visual Placeholders to Ease Attention Switching

Dagmar Kern, *University of Duisburg-Essen, Germany*
Paul Marshall, *Open University, UK*
Albrecht Schmidt, *University of Duisburg-Essen, Germany*

Gazemarks are visual placeholders generated from eye tracking data and designed to aid attention switching. We explore different design parameters, and demonstrate their potential through a user study.

PAPER | Knowing Where and When to Look in a Time-Critical Multimodal Dual Task

Anthony J. Hornof, Yunfeng Zhang, Tim Halverson, *University of Oregon, USA*

Describes a dual-task experiment that explores people's ability to integrate perceptual and motor processing across tasks. Demonstrates how eye tracking data can be used to reveal effective multitasking strategies.

■ **PAPERS | REGENCY 7**

THERAPY AND REHABILITATION

SESSION CHAIR: Amy Hurst, *Carnegie Mellon University*

PAPER | Towards Customizable Games for Stroke Rehabilitation

Gazihan Alankus, *Washington University in St. Louis, USA*
Amanda Lazar, *University of California at San Diego, USA*
Matt May, Caitlin Kelleher, *Washington University in St. Louis, USA*

Our study demonstrates effective use of Wii remotes and webcams in games for stroke rehabilitation and how to design games that can be customized for patients with different recovery levels.

PAPER | Designing Patient-Centric Information Displays for Hospitals

Lauren Wilcox, *Columbia University, USA*
Dan Morris, Desney Tan, *Microsoft Research, USA*
Justin Gatewood, *Washington Hospital Center, USA*

We assembled prototype in-room, patient-centric information displays using EMR data. We present the design of our prototypes and findings from a formative study conducted in an emergency department.

PAPER | Supporting Sandtray Therapy on an Interactive Tabletop

Mark Hancock, *University of Calgary, Canada*
Thomas ten Cate, *University of Groningen, The Netherlands*
Sheelagh Carpendale, *University of Calgary, Canada*
Tobias Isenberg, *University of Groningen, The Netherlands*

Cooperative design of a 3D tabletop display application for use in sandtray therapy - a form of art therapy. Can improve child therapy and inform 3D tabletop display interaction design.

■ **INVITED DESIGN ACTIVITY | HANOVER CDE**

PACHUBE DESIGN ACTIVITY – A DESIGN ACTIVITY WITH MANY HANDS

Pachube [http://www.pachube.com/] is a platform that enables you to store, share and discover realtime sensor, energy and environment data from objects, devices and buildings around the world, facilitating interaction between remote environments, both physical and virtual. In this 90-minute collaborative design activity, Usman Haque, Pachube creator, will be giving a basic introduction to Pachube and then leading a collaborative design activity to show how data from around the world (and from the person next to you) can be quickly shared, modeled, and applied. Time permitting, we will be having a short discussion about the potential applications for connect-sites, like Pachube, and what impact they might have on HCI discourse. This session is part of the CHI Design Community's series of events this year, focused on the contemporary confluence of data and design.

■ **TOCHI | HANOVER FG**

ACTIVITIES, ACCESS CONTROL & NETWORKING

SESSION CHAIR: Susanne Bodker, *University of Aarhus*

TOCHI | Activity-Based Computing for Medical Work in Hospitals

Jakob Bardram, *IT University of Copenhagen, Denmark*

Presents a new paradigm for human-computer interaction based on human activity and its application in a hospital environment. Can help design new classes of interaction technology and clinical applications.

TOCHI | Computer Supported Access Control

Gunnar Stevens, *University of Siegen, Germany*
Volker Wulf, *University of Siegen and Fraunhofer FIT, Germany*

We reconceptualize the issue of access control on a theoretical, methodological and practical level. As a result, we enhance the design space of technical mechanisms of access control.

TOCHI | Experiences with Recombinant Computing: Exploring Ad Hoc Interoperability in Evolving Networks

W. Keith Edwards, *Georgia Institute of Technology, USA*
Mark Newman, *University of Michigan, USA*
Jana Sedivy, Trevor Smith, *Palo Alto Research Center, USA*

We describe the Obje/Speakeasy interoperability framework, including its novel approach to facilitating interoperation and well as its impact on the user experience.

TOCHI | The Ins and Outs of Home Networking: The Case for Useful and Usable Domestic Networking

Rebecca E. Grinter, W. Keith Edwards, Marshini Chetty, Erika Shehan Poole, Ja-Young Sung, Jeonghwa Yang, *Georgia Institute of Technology, USA*
Andy Crabtree, Peter Tolmie, Tom Rodden, Chris Greenhalgh, Steve Benford, *University of Nottingham, UK*

Empirical studies of home networking and design implications that highlight how network solutions are not only technically challenging but must also fit in with the social organization of the household.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

DESIGNING USER INTERFACES FOR MULTI-TOUCH AND SURFACE-GESTURE DEVICES

ORGANIZERS:
Daniel Wigdor, *Microsoft, USA*
Gerald Morrison, *Smart Technologies, Canada*

CHI 2010
we are HCI

Thursday

= 15 minutes = 30 minutes = unscheduled time

	8:15–8:45	9:00–10:30	11:30–13:00	14:30–16:00	16:30–18:00
Centennial 1		**Papers/Notes** Everyday Gestures Page 68	**Papers** Displays Where You Least Expect Them Page 72		**Closing Plenary** **Noel Sharkey** Doing what's right with robots: an ethical appraisal of robot application Page 79
Centennial 2	**CHI Madness** Page 68	**Invited Design Speaker** Usman Haque Page 68	**Panel** Data and Information in the Palm of Our Hands Page 72		
Centennial 3		**Papers** Multitouch Page 68	**Papers/Case Studies** Users and Attention on the Web Page 72		
Centennial 4		**Papers/Notes** Perspectives on Design Page 69	**Papers** Domestic Page 72	**Papers** Graphs Page 76	
Regency 5		**Papers** Public Displays Page 69	**Papers/Notes/Case Studies** Cooking, Classrooms and Craft Page 73	**Papers/Notes** No Touch Page 76	
Regency 6		**Papers** Sensing Page 69	**Papers/Case Studies** Software Understanding and Maintenance Page 73	**Papers/Notes** HCI and the Developing World Page 76	
Regency 7		**Papers/Notes** Usability Methods and New Domains Page 70	**Papers/Notes** 1001 Users Page 74	**Papers/Case Studies** Shopping and Product Design Page 77	
Hanover CDE		**Papers** HCI in China Page 70	**Student Research Competition** Page 74	**Student Design Competition** Page 77	
Hanover FG		**Papers** We Are Family Page 71	**Papers/Notes/Case Studies** Finding Your Mojo and Doing Some Good Page 74	**TOCHI** Data Mining for Understanding User Needs Page 78	
Chicago ABC		**SIG** Contextual User Experience: How to Reflect It in Interaction Designs? Page 71	**SIG** Management Community Page 75	**SIG** Automotive User Interfaces Page 78	

Commons/Grand Hall	Special Events	
Exhibits, & Info Booth 10:30–14:30	**Spotlight on Doctoral Consortium Posters** 10:30–11:30 Commons	**Media Showcase Performances** 11:30–13:00 Commons Stage
Media Showcase Interactivity Demos 10:30 – 11:30		

CHI MADNESS | CENTENNIAL 2

8:00-8:45

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

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

■ **PAPERS/NOTE | CENTENNIAL 1**

EVERYDAY GESTURES

SESSION CHAIR: Michael Rohs, *Deutsche Telekom Laboratories*

PAPER | MAGIC: A Motion Gesture Design Tool

Daniel Ashbrook, *Georgia Tech & Nokia Research Center Hollywood, USA*
Thad Starner, *Georgia Tech, USA*

A system to help designers create motion gestures that won't be confused with peoples' everyday motions. Presents results of study and gesturing techniques invented by users to control audio player.

NOTE | Protractor: A Fast and Accurate Gesture Recognizer

Yang Li, *Google, USA*

Describes a template-based gesture recognizer that employs a novel approach for measuring gesture similarity, covers rich gesture variation and leads to significant performance improvements; can run efficiently on mobile devices.

PAPER | GesText: Accelerometer-Based Gestural Text-Entry Systems

Eleanor Jones, Jason Alexander, Andreas Andreou, *University of Bristol, UK*
Pourang Irani, *University of Manitoba, Canada*
Sriram Subramanian, *University of Bristol, UK*

A study of the factors influencing the design of accelerometer-based text-entry systems, incorporating a rich description of the design space, two pilot experiments and evaluations of two example text-entry interfaces.

■ **INVITED DESIGN SPEAKER | CENTENNIAL 2**

SPEAKER: Usman Haque, *Architecture, Interaction Systems*

As the Director of Haque Design + Research Ltd. [http://www.haque.co.uk/], Usman Haque has pulled together issues of data, kinetics, collaboration, architecture, and communication. His work brings together various areas of contemporary design practice; bringing interaction in touch with information, combining kinetics with collaboration, and tying the architectonic to the technologic. Each of his projects touches a range of disciplines – and often brushes the sky. He argues that contemporary "technologies alter our understanding of space and change the way we relate to each other. We no longer think of architecture as static and immutable; instead we see it as dynamic, responsive and conversant." Like the fabled Alice, Mr. Haque found a doorway where before there was only cold reflection. Join us this morning to get a look at what Mr. Haque found on the other side.

■ **PAPERS | CENTENNIAL 3**

MULTITOUCH

SESSION CHAIR: Ben Bederson, *University of MaryLand*

Paper | Multi-touch techniques for Exploring Large-Scale 3D Astrophysical Simulations

Chi-Wing Fu, Wooi Boon Goh , Junxiang Allen Ng, *Nanyang Technological University, Singapore*

Multi-touch techniques that deliver an effective exploratory interface to navigate the unique features of large-scale 3D environments such as astrophysical simulations

Paper | Graspables Revisited: Multi-Touch vs. Tangible Input for Tabletop Displays in Acquisition and Manipulation Tasks

Philip Tuddenham, *University of Cambridge, UK*
David Kirk, *University of Nottingham, UK*
Shahram Izadi, *Microsoft Research Cambridge, UK*

Describes experimental comparisons of multi-touch and TUI input techniques for target acquisition and manipulation tasks on interactive tabletops. Demonstrates and discusses potential benefits of TUIs for both tasks.

Paper | The Design and Evaluation of Multitouch Marking Menus

Julian Lepinski, Tovi Grossman, George Fitzmaurice, *Autodesk Research, Canada*

Describes the design and evaluation process behind multitouch marking menus, including an evaluation of chorded multitouch gestures. Multitouch marking menus show performance improvements over traditional hierarchical marking menus.

■ PAPERS/NOTES | CENTENNIAL 4

PERSPECTIVES ON DESIGN

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

NOTE | Multi-lifespan Information System Design: A Research Initiative for the HCI Community

Batya Friedman, *University of Washington, USA*
Lisa P. Nathan, *University of British Columbia, Canada*

Proposes a new research initiative for the HCI community: multi-lifespan information system design. Examines key opportunities, roles, and challenges for interaction design to contribute longer-term solutions to significant real-world problems.

PAPER | Designing Interactivity in Media Interfaces: A Communications Perspective

S. Shyam Sundar, Qian Xu, Saraswathi Bellur, *Penn State University, USA*

Identifies design challenges for enhancing user experience, based on concepts emerging from three species of interactivity--source, medium and message elements. Describes psychological outcomes and user engagement with interactive interfaces.

PAPER | Designing with Interactive Example Gallerie

Brian Lee, Savil Srivastava, Ranjitha Kumar, Ronen Brafman, Scott R. Klemmer, *Stanford University, USA*

Presents an interface for designing web pages with interactive example galleries. Describes three studies finding that independent raters prefer designs created with the aid of examples.

■ PAPERS | REGENCY 5

PUBLIC DISPLAYS

SESSION CHAIR: Elaine Huang, *University of Calgary*

PAPER | Worlds of Information: Designing for Engagement at a Public Multi-Touch Display

Giulio Jacucci, Ann Morrison, *Helsinki Institute for Information Technology HIIT & Aalto University, Finland*
Gabriela T. Richard, *New York University, USA*
Jari Kleimola, Peter Peltonen, *Helsinki Institute for Information Technology HIIT & Aalto University, Finland*
Lorenza Parisi, *Sapienza Università di Roma, Italy*
Toni Laitinen, *Helsinki Institute for Information Technology HIIT & Aalto University, Finland*

Worlds of Information are multi-touch 3D widgets that unfold and provide parallel access to diverse content. In a field trial users effectively interacted in parallel and reported engaging experiences.

PAPER | Designing Urban Media Façades: Cases and Challenges

Peter Dalsgaard, Kim Halskov, *Aarhus University, Centre for Digital Urban Living, Denmark*

Based on five cases we discuss eight challenges faced when designing urban media façades. The challenges concern: interfaces, physical integration, robustness, content, stakeholders, situation, social relations, and emerging use.

PAPER | Touch Projector: Mobile Interaction through Video

Sebastian Boring, Dominikus Baur, Andreas Butz, *University of Munich, Germany*
Sean Gustafson, Patrick Baudisch, *Hasso Plattner Institute, Germany*

Touch Projector is a mobile application that allows manipulating content on distant displays through live video. We present improvements for mobile use - zooming and temporarily freezing the video image.

■ PAPERS | REGENCY 6

SENSING

SESSION CHAIR: Albrecht Schmidt, *University Duisburg-Essen*

PAPER | High Accuracy Position and Orientation Detection in Two-Dimensional Communication Network

Kei Nakatsuma, Hiroyuki Shinoda, *The University of Tokyo, Japan*

Describes a method and a prototyping for a novel position and orientation detection of devices in Two-Dimensional Communication networks.

PAPER | Rethinking RFID: Awareness and Control For Interaction With RFID Systems

Nicolai Marquardt, *University of Calgary, Canada*
Alex S. Taylor, Nicolas Villar, *Microsoft Research Cambridge, UK*
Saul Greenberg, *University of Calgary, Canada*

Describes novel RFID tags providing reader awareness and information control. These tags give people control over RFID, a technology that is usually experienced passively and often operates invisibly.

PAPER | SensorTune: a Mobile Auditory Interface for DIY Wireless Sensor Networks

Enrico Costanza, *ECS School, University of Southampton, UK*
Jaques Panchard, *Itecor - IT Governance, Geneva, Switzerland*
Guillaume Zufferey, *EPFL, Switzerland*
Julien Nembrini, *Constructive and Structural Design Lab, UdK Berlin, Germany*
Julien Freudiger, Jeffrey Huang, Jean-Pierre Hubaux, *EPFL, Switzerland*

SensorTune uses non-speech audio to support users in setting up Wireless Sensor Networks. In a user study (N=20) it outperformed a comparable GUI for task completion time and users preference.

■ **PAPERS/NOTE/CASE STUDY | REGENCY 7**

USABILITY METHODS AND NEW DOMAINS

SESSION CHAIR: Youn-kyung Lim, *KAIST*

PAPER | API Usability Peer Reviews: A Method for Evaluating the Usability of Application Programming Interfaces

Umer Farooq, Leon Welicki, Dieter Zirkler, *Microsoft, USA*

We describe a new usability inspection method to evaluate APIs. Our method is significantly more efficient (16x) than standard API usability tests in the lab.

PAPER | Understanding Usability Practices in Complex Domains

Parmit K. Chilana, Jacob O. Wobbrock, Andrew J. Ko, *University of Washington, USA*

Presents empirical data from interviews with usability professionals on the challenges of working in complex domains and the coping strategies used. Discusses implications of the results for usability training.

NOTE | Average Task Times in Usability Tests: What to Report?

Jeff Sauro, *Oracle, Measuring Usability LLC, USA*
James Lewis, *IBM, USA*

Monte carlo simulations from 61 usability tasks shows the geometric mean provides a more accurate estimate of the average task-time than the median and mean in small sample (n<25) test.

CASE STUDY | Concept Mapping in Agile Usability: A Case Study

Jeremy T. Barksdale, Scott McCrickard, *Virginia Tech, USA*

This study presents a collaborative concept mapping approach that allows for greater application of HCI methods and more usable software through the removal of project team barriers.

■ **PAPERS | HANOVER CDE**

HCI IN CHINA

SESSION CHAIR: John Thomas, *IBM*

PAPER | Predicting Chinese Text Entry Speeds on Mobile Phones

Ying Liu, *Nokia Research Center, China*
Kari-Jouko Räihä, *University of Tampere, Finland*

The paper presents a predictive model (integrating Fitts' law, language model, KLM and a linear model) on users' error free speeds with Chinese text entry methods on mobile phones.

PAPER | Chinese Online Communities: Balancing Management Control and Individual Autonomy

Qinying Liao, Yingxin Pan, Michelle X. Zhou, Fei Ma, *IBM Research, China*

We present findings of three related studies on understanding the governance practices of online social communities in China and their comparison to those in the United States

Paper | How Socio-Economic Structure Influences Rural Users' Acceptance of Mobile Entertainment

Jun Liu, *Tsinghua University, China*
Ying Liu, *Nokia Research Center, China*
Pei-Luen Patrick Rau, Hui Li, *Tsinghua University, China*
Xia Wang, *Nokia Research Center, China*
Dingjun Li, *Tsinghua University, China*

Describes a quantitative comparative study of factors influencing technology acceptance in two populations in rural China. Can assist practitioners in understanding the influence of socio-economic situation on user's needs.

■ **PAPERS | HANOVER FG**

WE ARE FAMILY

SESSION CHAIR: Steve Harrison, *Virginia Tech*

Paper | Designing a Technological Playground: A Field Study of the Emergence of Play in Household Messaging

Siân E. Lindley, Richard Harper, Abigail Sellen, *Microsoft Research Cambridge, UK*

Describes a field study of a home messaging device. Details four categories of playful practices that emerged, links them to a theoretical account, and draws implications for designing for play.

PAPER | The Family Window: The Design and Evaluation of a Domestic Media Space

Tejinder K. Judge, *Virginia Tech, USA*
Carman Neustaedter , Andrew F. Kurtz, *Kodak Research Labs, USA*

A study about the use of a domestic media space with always-on video. Results can inform the design of future domestic communication and awareness technologies.

PAPER | FM Radio: Family Interplay with Sonic Mementos

Daniela Petrelli, *University of Sheffield, UK*
Nicolas Villar, *Microsoft Research, UK*
Vaiva Kalnikaite, *University of Sheffield, UK*
Lina Dib, *Rice University, USA*
Steve Whittaker, *University of Sheffield, UK*

Based on fieldwork with families, we designed the Family Memory Radio to embody sonic digital mementos of past holidays. We describe how we encased technology into an old fashion shell.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

CONTEXTUAL USER EXPERIENCE: HOW TO REFLECT IT IN INTERACTION DESIGNS?

ORGANIZERS:

Manfred Tscheligi, Marianna Obrist, *University of Salzburg - ICT&S, Austria*
Boris de Ruyter, *Philips Research Europe, The Netherlands*
Albrecht Schmidt, *University of Duisburg-Essen, Germany*

■ PAPERS | CENTENNIAL 1

DISPLAYS WHERE YOU LEAST EXPECT THEM

SESSION CHAIR: Chris Harrison, *Carnegie Mellon University*

PAPER | LensMouse: Augmenting the Mouse with an Interactive Touch Display

Xing Dong Yang, *University of Alberta, Canada*
Edward Mak, David McCallum, Pourang Irani, *University of Manitoba, Canada*
Xiang Cao, Shahram Izadi, *Microsoft Research Cambridge, UK*

Present LensMouse, a novel input device that augments a mouse with an interactive touch display. Demonstrate the benefits of the LensMouse via an experiment and present novel applications and interactions.

PAPER | PACER: Fine-grained Interactive Paper via Camera-touch Hybrid Gestures on a Cell Phone

Chunyuan Liao, Qiong Liu, Bee Liew, Lynn Wilcox, *FXPAL, U.S.A.*

Present an interactive paper system based on a cell phone interface with hybrid camera and touch input. Support gesture-based interaction with fine-grained document content on paper.

PAPER | MouseLight: Bimanual Interaction on Digital Paper using a Pen and a Spatially-Aware Mobile Projector

Hyunyoung Song, *University of Maryland, USA*
Francois Guimbretiere, *Cornell University, USA*
Tovi Grossman, George Fitzmaurice, *Autodesk Research, Canada*

Presents a novel augmented reality system that enhances a paper surface with virtual content and executes instructions by way of a digital pen.

■ INVITED DESIGN PANEL | CENTENNIAL 2

DATA AND INFORMATION IN THE PALM OF OUR HANDS

What happens when information is ubiquitous? Who will own the data that we produce? How will we make sense of it? How would our everyday lives change if data-centric became a way of life? How is Design effected by this radical transformation? What can Design do to respond to this transformation? Clearly we've got questions, and no simple answer will suffice - nor satisfy. This Design Panel will lead a discussion on the intricate complexities of ubiquitous information and try to unravel the role of Design in a world where all data and information is in the palm of our hands.

■ PAPER/CASE STUDIES | CENTENNIAL 3

USERS AND ATTENTION ON THE WEB

SESSION CHAIR: Jeffrey W. Nichols, *Carnegie Mellon University*

PAPER | Enhancing Web Page Readability for Non-native Readers

Chen-Hsiang Yu, Robert C. Miller, *Massachusetts Institute of Technology, U.S.A.*

We propose a new transformation method, Jenga Format, to enhance web page readability. The user study indicated that Jenga format improved reading comprehension without negatively affecting reading speed.

CASE STUDY | The Mystique of Numbers: Belief in Quantitative Approaches to Segmentation and Persona Development

David Siegel, *Dray & Associates, Inc., USA*

Case study exposing limitations of quantitative user segmentation and problems in evolving practice of segmentation and use of personas. Will help practitioners counteract excessive deference to quantitative user research.

CASE STUDY | Automating UI Guidelines verification by leveraging pattern based UI and model based development

Satya Viswanathan, Peters Johan Christiaan, *SAP Labs, Germany*

Case study describes an efficient process of embedding UI design guidelines into development environments to achieve higher UI consistencies in large scale software applications and making the development process faster.

■ PAPERS | CENTENNIAL 4

DOMESTIC LIFE

SESSION CHAIR: Dave Kirk, *Nottingham University*

PAPER | How Routine Learners can Support Family Coordination

Scott Davidoff, John Zimmerman, Anind K. Dey, *Carnegie Mellon, USA*

Offers a vision of how simple sensing could capture and model idiosyncratic routines, enabling applications to solve real problems. Focuses on augmenting calendars and reminder systems to improve family coordination.

PAPER | The Design and Evaluation of an End-User-Deployable, Whole House, Contactless Power Consumption Sensor

Shwetak N. Patel, Sidhant Gupta, *University of Washington, USA*
Matthew S. Reynolds, *Duke University, USA*

We present the design, development, and evaluation of an end-user installable, whole house power consumption sensing system capable of gathering accurate real-time power in the home.

PAPER | InPhase: Evaluation of a Communication System Focused on "Happy Coincidences" of Daily Behaviors

Hitomi Tsujita, Koji Tsukada, Itiro Siio, *Ochanomizu University, Japan*

A new method of communicating "happy coincidences" in daily activities between people separated by long distances. This system can enhance intimacy, closeness and privacy while reducing annoyance.

■ **PAPERS/NOTE/CASE STUDY | REGENCY 5**

COOKING, CLASSROOMS, AND CRAFT

SESSION CHAIR: Alice (Haeyun) Oh, *KAIST*

PAPER | Spyn: Augmenting the Creative and Communicative Potential of Craft

Daniela Rosner, Kimiko Ryokai, *University of California Berkeley, USA*

We present data collected from a field study of crafters and craft recipients introduced to Spyn — mobile phone software that associates digital records with locations on fabric.

PAPER | Toque: Designing a Cooking-Based Programming Language For and With Children

Sureyya Tarkan, Vibha Sazawal, Allison Druin, Evan Golub, Elizabeth M. Bonsignore, Greg Walsh, *University of Maryland, USA*
Zeina Atrash, *Northwestern University, USA*

Presents implications from an intergenerational design process to create a cooking-based programming language utilizing a Wiimote. Can assist researchers, working in tangible systems, with teaching computational thinking to young children.

NOTE | Cooking with Robots: Designing a Household System Working in Open Environments

Yuta Sugiura, *Keio University, Japan*
Daisuke Sakamoto, *The University of Tokyo, Japan*
Anusha Withana, Masahiko Inami, *Keio University, Japan*
Takeo Igarashi, *The University of Tokyo, Japan*

We propose a cooking-with-robots system that operates in an open environment. The system incorporates robotic and human elements interoperating in a shared workspace as to achieve a rudimentary cooking capability.

CASE STUDY | Designing a Pen-based Flashcard Application to Support Classroom Learning Environment

YoungJoo Jeong, Ananda Gunawardena, Kenneth R. Koedinger, *Carnegie Mellon University, USA*

Case study demonstrating a new and fun way to design interactive e-learning applications using flash cards. It enhances students' approach to learning and it makes life easier for the teacher.

■ **PAPERS/CASE STUDY | REGENCY 6**

SOFTWARE UNDERSTANDING AND MAINTENANCE

SESSION CHAIR: Björn Hartmann, *University of California Berkeley, USA*

PAPER | Code Bubbles: A Working Set-based Interface for Code Understanding and Maintenance

Andrew Bragdon, Robert Zeleznik, Suman Karumuri, Steven P. Reiss, Joshua Kaplan, William Cheung, Christopher Coleman, Ferdi Adeputra, *Brown University, USA*
Joseph J. LaViola Jr., *University of Central Florida, USA*

We propose a novel user interface metaphor for code understanding based on collections of lightweight, editable fragments called bubbles, which form concurrently visible working sets.

PAPER | How to Support Designers in Getting Hold of the Immaterial Material of Software

Fatih Kursat Ozenc, Miso Kim, John Zimmerman, Stephen Oney, Brad Myers, *Carnegie Mellon University, USA*

This work investigates features of future tools to support conceiving, refining, and communicating of interactive behaviors, which are challenging to grasp due to the 'immaterial' materiality of the digital domain.

CASE STUDY | "Fit and Finish" Using a Bug Tracking System - Challenges and Recommendations

Yossi Avnon, Scott L. Boggan, *Microsoft, USA*

Presents recommendations for efficiently managing UX "fit and finish" through a bug tracking system. Can assist in developing effective processes for enhancing UI quality throughout the development cycle.

■ **PAPER/NOTES | REGENCY 7**

1001 USERS

SESSION CHAIR: Elizabeth Buie, *Luminanze*

PAPER | Think-Aloud Protocols: A Comparison of Three Think Aloud Protocols for use in Testing Data Dissemination Web Sites for Usability

Erica L. Olmsted-Hawala, Elizabeth D. Murphy, Sam Hawala, Kathleen T. Ashenfelter, *U.S. Census Bureau, USA*

Three think-aloud protocols: traditional, speech-communication, coaching were usability tested. Results show accuracy and satisfaction are significantly higher in the coaching condition. There were no significant differences with respect to efficiency.

NOTE | Powerful and consistent analysis of Likert-type rating scales

Maurits Kaptein, *Eindhoven University of Technology, The Netherlands*
Clifford Nass, *Stanford University, USA*
Panos Markopoulos, *Eindhoven University of Technology, The Netherlands*

Describes a nonparametric method to analyze data obtained from Likert-type scales in factorial experiments. The approach is invariant under monotone transformations. Accompanying website supports researchers in their analysis process.

NOTE | Measuring the User Experience on a Large Scale: User-Centered Metrics for Web Applications

Kerry Rodden, Hilary Hutchinson, Xin Fu, *Google, USA*

Introduces the HEART framework for large-scale metrics of user experience (Happiness, Engagement, Adoption, Retention, and Task success), and the Goals-Signals-Metrics definition process. Includes examples of real applications.

NOTE | Are your participants gaming the system? Screening Mechanical Turk Workers

Julie S. Downs, Mandy B. Holbrook, Steve Sheng, Lorrie Faith Cranor, *Carnegie Mellon University, USA*

A screening process to identify non-conscientious survey participants, tested in Amazon.com's Mechanical Turk. Test qualification can be used to exclude problematic participants, who vary systematically in age, sex, and occupation.

NOTE | Trained to Accept? A Field Experiment on Consent Dialogs

Rainer Boehme, *International Computer Science Institute Berkeley, USA*
Stefan Koepsell, *Technische Universitaet Dresden, Germany*

A field experiment with 80,000 users shows that even security-conscious users click on "accept" when a dialog resembles an end-user license agreement, thereby blindly agreeing to possibly unwanted terms.

■ **STUDENT RESEARCH COMPETITION | HANOVER CDE**

SESSION CHAIRS: Joanna McGrenere, *University of British Columbia*
Michael Terry, *University of Waterloo*

JUDGES:
Jan Borchers, *Aachen University, Germany*
Lorrie Cranor, *Carnegie Mellon University, USA*
Pierre Dragicevic, *INRIA Saclay, France*
Clifton Forlines, *Draper Laboratory, USA*
Krzysztof Gajos, *Harvard University, USA*
Jeff Heer, *Stanford University, USA*
Kasper Hornbaek, *University of Copenhagen, Denmark*
Takeo Igarashi, *University of Tokyo, Japan*
Simeon Keates, IT *University of Copenhagen, Denmark*
Per Ola Kristensson, *University of Cambridge, UK*
Kent Lyons, *Intel Research, USA*
Paul Maglio, *IBM Research, USA*
Andrew Monk, *York University, UK*
Michael Muller, *IBM Research, USA*
Bonnie Nardi, *University of California, Irvine, USA*
Sharon Oviatt, *Incaa Designs, USA*
Jeff Pierce, IBM Research, USA
Robert St Amant, *North Carolina State University, USA*
Abigail Sellen, *Microsoft Research Cambridge, UK*
John Tang, *Microsoft Research, USA*
Daniel Wigdor, *Microsoft Research, USA*
Terry Winograd, *Stanford University, USA*

This is the final round of the CHI 2010 Student Research Competition, in which the student finalists give short talks about their research to CHI attendees. A panel of expert judges will evaluate and score both the research and the presentation, and select the winning entries.

■ **PAPERS/NOTE/CASE STUDIES | HANOVER FG**

FINDING YOUR MOJO AND DOING SOME GOOD

SESSION CHAIR: Deborah Tatar, *Virginia Tech*

PAPER | O Job Can You Return My Mojo?: Improving Human Engagement and Enjoyment in Routine Activities

Dvijesh Shastri, Yuichi Fujiki, Ross Buffington, Panagiotis Tsiamyrtzis, Ioannis Pavlidis, *University of Houston, USA*

This paper proves that blending mild mental/physical challenges in routine monitoring tasks increases enjoyment without sacrificing performance. The concept may find broad applications in the security industry.

NOTE | Identifying Drivers and Hindrances of Social User Experience in Web Services

Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology & Nokia Research Center, Finland*
Minna Wäljas, Jarno Ojala, *Tampere University of Technology, Finland*
Katarina Segerståhl, *University of Oulu, Finland*

This research identifies distinct drivers and hindrances for social user experience (UX) of Web services. The findings can be used to inform design and as evaluation criteria for social UX.

CASE STUDY | A Novel Way to Conduct Human Studies and Do Some Good

Pradeep Buddharaju, Yuichi Fujiki, Ioannis Pavlidis, *University of Houston, USA*
Ergun Akleman, *Texas A&M University , USA*

The authors describe a novel way to conduct large-scale human studies achieving the maximum outreach and impact with the minimum cost.

CASE STUDY | More than a Feeling: Understanding the Desirability Factor in User Experience

Carol M. Barnum, Laura A. Palmer, *Southern Polytechnic State University, USA*

We report on our use of Microsoft's product reaction cards in several studies and their effectiveness in helping us understand the desirability factor in products from our users' perspective.

■ **SPECIAL INTEREST GROUP | CHICAGO ABC**

SPECIAL INTEREST GROUP FOR THE CHI 2010 MANAGEMENT COMMUNITY

ORGANIZERS: Garett Dworman, *TecEd, USA*
Jim Nieters, *Yahoo, Inc., USA*

■ PAPERS | CENTENNIAL 4

GRAPHS

SESSION CHAIR: Steve Feiner, *Columbia University*

PAPER | A Model of Symbol Size Discrimination in Scatterplots

Jing Li, Jean-Bernard Martens, Jarke J. van Wijk, *Eindhoven University of Techonology, the Netherlands*

Proposes an optimal scale for symbol size in scatterplots, based on a model of their perception and experiments. Provides designers with guidelines for graphic encoding using size for optimal discriminability.

PAPER | Individual Models of Colour Differentiation to Improve Interpretability of Information Visualization

David R. Flatla, Carl Gutwin, *University of Saskatchewan, Canada*

Presents a new technique for modeling human color-differentiation abilities, based on empirical calibration, that covers a wider range of color vision deficiencies and environmental effects.

PAPER | Useful Junk? The Effects of Visual Embellishment on Comprehension and Memorability of Charts

Scott Bateman, Regan L. Mandryk, Carl Gutwin, Aaron Genest, David McDine, Christopher Brooks, *University of Saskatchewan, Canada*

Presents a study of how visual embellishments affect memorability and interpretation of charts, and shows that the additional imagery can have a beneficial effect without reducing interpretation accuracy.

■ PAPERS/NOTE | REGENCY 5

NO TOUCH

SESSION CHAIR: Rob Miller, *MIT*

NOTE | Interactivity and Non-Interactivity on Tabletops

Kenton O'Hara, *Microsoft Research, UK*

The paper discusses the relationship between interactive and non-interactive aspects of tabletop computing. The relationship is illustrated using findings from a deployment of an interactive tabletop in a public setting.

PAPER | Clutch-Free Panning and Integrated Pan-Zoom Control on Sensitive Surfaces: The CycloStar Approach

Sylvain Malacria, Eric Lecolinet, Yves Guiard, *Télécom ParisTech, France*

Describes and evaluates two navigation techniques for touchscreens based on sustained oscillatory gestures : CycloPan for clutch-free 2D panning and browsing; CycloZoom+ for integrated 2D panning and zooming.

PAPER | Touching the Void: Direct-Touch Interaction for Intangible Displays

Li-Wei Chan, Hui-Shan Kao, Yen-Yang Chen, Ming-Sui Lee, Jane Yung-jen Hsu, Yi-Ping Hung, *National Taiwan University, Taiwan*

Unlike tangible displays, intangible displays suffer from lack of tactile feedback. This paper explores the challenges in applying and investigates methodologies to improve direct-touch interaction on intangible displays.

■ PAPERS/NOTES | REGENCY 6

HCI AND THE DEVELOPING WORLD

SESSION CHAIR: Gary Olson, *University of California Irvine*

PAPER | Intermediated Technology Use in Developing Communities

Nithya Sambasivan, *University of California at Irvine, USA*
Ed Cutrell, *Microsoft Research India, India*
Kentaro Toyama, *University of California at Berkeley, USA*
Bonnie Nardi, *University of California Irvine, USA*

Describes intermediated technology use in resource-constrained urban slums, including mechanisms, interface requirements, and its broader effects. Can help designers of technology for "developing" regions.

PAPER | Deliberate Interactions: Characterizing Technology Use in Nairobi, Kenya

Susan P. Wyche, Thomas N. Smyth, Marshini Chetty, *Georgia Institute of Technology, USA*
Paul M. Aoki, *Intel Labs Berkeley, USA*
Rebecca E. Grinter, *Georgia Institute of Technology, USA*

We provide empirical evidence demonstrating constraints professionals in Nairobi, Kenya, encountered when using technology. We use our findings to evaluate the "access, anytime and anywhere" construct shaping future technology design.

NOTE | After Access - Challenges Facing Mobile-Only Internet Users in the Developing World

Shikoh Gitau, Gary Marsden, *University of Cape Town, South Africa*
Jonathan Donner, *Microsoft Research, USA*

Looks at the issues faced by a group of mobile-only users attempting to use the internet in a township in South Africa.

NOTE | ViralVCD: Tracing Information-Diffusion Paths with Low Cost Media in Developing Communities

Nithya Sambasivan, *University of California at Irvine, USA*
Ed Cutrell, *Microsoft Research India, India*
Kentaro Toyama, *University of California at Berkeley, USA*

Describes a low-cost method to trace information-diffusion paths and technology access in poor communities. Employs Video-CDs and missed calls to gain social, technological, and developmental data. Can help HCI4D researchers.

■ PAPERS/CASE STUDY | REGENCY 7

GOING TO THE MALL: SHOPPING AND PRODUCT DESIGN

SESSION CHAIR: Gregory Abowd, *Georgia Tech*

PAPER | Countertop Responsive Mirror: Supporting Physical Retail Shopping for Sellers, Buyers and Companions

Maurice Chu, Brinda Dalal, Alan Walendowski, Bo Begole, *Palo Alto Research Center (PARC), USA*

Formative exploration of South Asian Jewelry shopping practices resulting in a novel "matched access" mirror system using computer vision. Can assist designers of technologies for collaborative evaluation of tactile products.

PAPER | Investigating the Opportunity for a Smart Activity Bag

Sun Young Park, *University of California at Irvine, USA*
John Zimmerman, *Carnegie Mellon University, USA*

CASE STUDY | Snap and Match: A Case Study of Virtual Cosmetics Color Consultation

Jhilmil Jain, Nina Bhatti, *Hewlett Packard Laboratories, USA*

An imaging based color cosmetics advisory service and an analysis of the effect of technical vs. social comfort of users on the design and usage of personal services for women.

■ STUDENT DESIGN COMPETITION | HANOVER CDE

SESSION CHAIRS: Steve Brewster, *University of Glasgow, UK*
Mike Glaser, Drexel *University, USA*

JUDGES:
Carla Diana, *Smart Design, USA*
Ellen Do, *Georgia Tech, USA*
Julie Maitland, *NRC, Canada*

This is the eighth year of the CHI Student Design Competition. The competition has grown each year with increased international representation, and always draws a large audience at CHI – it has become a major recruiting opportunity for identifying talented students. This year we received over 55 international submissions as evidence in a record number of international qualifiers into the next round of the competition. Twelve of the top submission, from the almost 90 submissions were invited to CHI 2010 to take part in the next stage(s) of the competition, based upon reviewer ratings and comments. Teams will be provided space in the convention center to display posters and discuss their proposed solutions with the CHI 2010 attendees.

This years challenge is to design an object, interface, system, or service intended to encourage people to take a walk. 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 your target audience. Your solution should address one main theme that encourages people to walk such as health, enjoyment, sustainability, community, or commuting.

A scheduled 90-minute poster presentation event will take place during the conference. Student teams will be expected to host their posters and discuss their approach, design method and solutions with the Student Design Competition Judges. The competition judges will select four teams to orally present their proposed solutions during a scheduled Student Design Competition Final CHI presentation session.

■ TOCHI INVITED PAPERS | HANOVER FG

DATA MINING FOR UNDERSTANDING USER NEEDS

SESSION CHAIR: Susan Dumais, *Microsoft Research*

TOCHI | Potential for Personalization

Jaime Teevan, Susan T. Dumais, Eric Horvitz, *Microsoft Research*

Identifies what different people consider relevant to the same query using explicit relevance judgments and implicit measures (click behavior and desktop content); applies to a personalized search system.

TOCHI | Brief Encounters: Sensing, Modelling and Visualizing Urban Mobility and Copresence Networks

Vassilis Kostakos, *University of Madeira, Portugal*
Eamonn O'Neill, *University of Bath, UK*
Alan Penn, *University College London, UK*
Dikaios Papadogkonas, George Roussos, *Birkbeck College, UK*

We develop and apply a toolkit of algorithms and visualisation techniques to model and make sense of spatial and temporal patterns in urban mobility, presence and encounter network traces.

TOCHI | Creating a Lightweight UIDL: An Overview and Analysis of the Personal Universal Controller Project

Jeffrey Nichols, *IBM Research, USA*
Brad A. Myers, *Carnegie Mellon University, USA*

We describe lessons for the design of a User Interface Description Language (UIDL) based on six years of investigation as part of the Personal Universal Controller project.

■ SPECIAL INTEREST GROUP | CHICAGO ABC

AUTOMOTIVE USER INTERFACES: HUMAN COMPUTER INTERACTION IN THE CAR

ORGANIZERS:
Albrecht Schmidt, *University of Duisburg-Essen, Germany*
Anind Dey, *CMU, USA*
Andrew Kun, *University of New Hampshire , USA*
Wolgang Spießl, *BMW Group Research and Technology, Germany*

■ CLOSING PLENARY – CENTENNIAL 1-3

DOING WHAT'S RIGHT WITH ROBOTS: AN ETHICAL APPRAISAL

Noel Sharkey PhD DSc FIEE FBCS CITP FRIN FRSA

University of Sheffield, UK

Professor of Artificial Intelligence and Robotics

Professor of Public Engagement

EPSRC Senior Media Fellow

Would you let robots care for your children, mind your aging parents, perform surgery on you, protect your home and fights your wars? Since the turn of the century, sales of professional and personal service robots have risen sharply to an estimated 11.5 million by 2011 Their numbers already far outstrip the 1.2 million operational industrial robots on the planet. Service robots are good at dull, dangerous, and dirty work, such as cleaning sewers and windows and performing domestic duties. They harvest fruit, pump gasoline, assist doctors and surgeons, dispose of bombs, police us, entertain us, have sex with us and even kill us. This talk will briefly overview today's service robots and their benefits and then focus on the near-future ethical dangers that they pose. Noel Sharkey BA PhD FIET, FBCS CITP FRIN FRSA is a Professor of Artificial Intelligence and Robotics and Professor of Public Engagement at the University of Sheffield (Department of Computer Science) and EPSRC Senior Media Fellow. He has held a number of research and teaching positions in the UK (Essex, Exeter, Sheffield) and in the USA (Yale, Stanford, Berkeley).

Dr. Sharkey has moved freely across academic disciplines, lecturing in departments of engineering, philosophy, psychology, cognitive science, linguistics, artificial intelligence and computer science. He holds a Doctorate in Experimental Psychology and an honorary Doctorate of Science. He is a chartered electrical engineer, a chartered information technology professional, a Fellow of The Royal Institution of Navigation (FRIN), the Royal Society for the encouragement of Arts, manufactures and commerce (FRSA), the Institution of Engineering and Technology (FIET), the British Computer Society (FBCS), is a member of both the Experimental Psychology Society and Association of Psychological Science and a member of Equity (the actor's union). He has published over a hundred academic articles and books as well as articles and web chats for BBC web pages and regular magazine articles. In addition to editing several journal special issues on modern robotics, he is Editor-in-Chief of the journal Connection Science and an editor of both Robotics and Autonomous Systems and Artificial Intelligence Review. His main research interests are now in Biologically Inspired Robotics, Cognitive Processes, history of automata (from ancient times to present), Human-Robot interaction and communication, Representations of Emotion and Machine learning.

Notes

Media Showcase
Posters/Exhibits

(Interactivity Demos, Performances, Videos)

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
10:30-11:30 During Break		**All Interactivity Demos Open** (Commons) Page 82-84	**All Interactivity Demos Open** (Commons) Page 82-84	**All Interactivity Demos Open** (Commons) Page 82-84
11:30-13:00 During Sessions	**Performances** Exploring the Design Space in Technology-Augmented Dance (Dance. DRAW) (Hanover A) Page 85	**Performances I** *Sawtooth* *Critical Point* *The Reactable: Tangible and Tabletop Music Performance* Page 85-86	**Performances II** *Everybody to the Power of One, for Soprano T-stick* *Shimon: An Interactive Improvisational Robotic Marimba Player* *The Biomuse Trio* Page 85-86	**Performances III** *Posthorn* *Radio Healer* *"Sxratch" for Metasaxophone* Page 85-86
13:30-14:30 During Break		**All Interactivity Demos Open** (Commons) Page 82-84	**All Interactivity Demos Open**n (Commons) Page 82-84	
14:30-16:00 During Sessions		**Performance Panel I** Panelists: Christopher Burns, ***Sawtooth*** Roger Dannenberg, ***Critical Point*** Sergi Jorda, ***The Reactable: Tangible and Tabletop Music Performance*** Celine Latulipe, ***Exploring the Design Space in Technology-Augmented Dance (Dance.Draw)*** Page 85-86	**Interactivity Demo Panel II** Panelists: Ohan Oda, ***Augmented Reality Games...*** Hrvoje Benko, ***Pinch-the-Sky Dome... Sean White, Exploring Interfaces... Botanical Species...*** Nicolai Marquardt, *Visible...**RFID Tags*** Javier Sanchez, ***Recognizing shapes...*** Maria Karam, ***The EmotiChair...*** Fabian Hemmert, ***Shape-Changing and Weight-Shifting Mobiles*** Page 82-84	
16:00-16:30 During Break		**All Interactivity Demos Open** (Commons) Page 82-84	**All Interactivity Demos Open** (Commons) Page 82-84	
16:30-18:00 During Sessions	**Interactivity Demo** Layered Surveillance - A Collaborative Interactive Art Installation (Hanover A) Page 83	**Interactivity Demo Panel I** Panelists: Fabian Winkler & Shannon McMullen ***The Elocuter...*** Celine Latulipe, ***Layered Surveillance*** Kenny K. N. Chow & D. Fox Harrell, ***Visual Renku...*** Jill Coffin, ***Robotany: Breezze*** Lindsay Grace, ***Critical Gameplay*** Dzmitry Tsetserukou, ***iFeel_IM:...*** Andrea Lockerd-Thomaz, ***Interactive Learning with...*** Page 82-84	**Performance Panel II** Panelists: D. Andrew Stewart, ***Everybody to the Power of One, for Soprano T-stick*** Guy Hoffman & Gil Weinberg, ***Shimon: An Interactive Improvisational Robotic Marimba Player*** Eric Lyon, ***The Biomuse Trio*** Ben Neill, ***Posthorn*** Christopher Martinez, ***Radio Healer*** Page 85-86	
18:30-21:00 Evening	**Performance** Bioluminescence Page 85 **All Interactivity Demos Open** (Commons) Page 82-84 **Add'l Interactivity Demo** Layered Surveillance (Hanover A) Page 83	**Video Night** 18:30-20:00 (Centennial 2) Page 87-88		

CHI 2010 MEDIA SHOWCASE

(Performances, Interactivity Demos, Video Program)

The CHI Media Showcase is your chance to fully engage with the work of the CHI Community. The Showcase provides a venue for researchers, practitioners, and artists to demonstrate prototypes and systems in a variety of formats and for you to walk the fine line between research, science, design, and art. The venue also enables designers and researchers to engage users/actors in actual use and interaction of their system/ concepts - as the user/actor you will be able to try out many of the interactivity demos first-hand!

The CHI Media Showcase for 2010 combines multiple venues from previous CHI conferences, including the Video Showcase, Design Vignettes, and Interactivity. Together we have formed a centerpiece for the conference that that will surely stimulate, inspire, and potentially challenge your assumptions about what Human-Computer Interaction is... and what it will become. The showcase will take place in the main exhibit hall throughout the conference with concerts, interactivity demonstrations, panel discussions, performances, and videos. Be sure to stop by at each break, in between program sessions to see a performance, try some hands-on interactivity demos, and meet with the 2010 CHI Media Showcase authors. You'll be able to see, touch, squeeze, hear or even smell visions for the future of HCI. So what does the future feel like? Come find out at the 2010 CHI Media Showcase!

CHI 2010 MEDIA SHOWCASE INTERACTIVITY DEMOS

When genius and inspiration meet technical mastery the results are amazing! The CHI Media Showcase demonstrations put the results in your hands, above your head, and in your mind. Immersive installations, Dada displays, and robots that remember all scramble, stabilize, see, scan, and soothe for your intellectual and inspirational pleasure!

Augmented Reality Games — Booth 36a*i*

Ohan Oda, Steven Feiner, *Columbia University*

We present two fast-paced augmented reality games. One is a single-player game experienced through a head-worn display. The player manipulates a tracked board to guide a virtual ball through a dynamic maze of obstacles. Combining the 3DOF absolute orientation tracker on the head-worn display with 6DOF optical marker tracking allows the system to always account for the correct direction of gravity. The second game is a networked, two-player, first-person-shooter, in which tracked hand-held UMPCs are used to blast virtual dominoes off a table. Players' virtual locations are warped to keep them from physically interfering with each other.

Critical Gameplay: Software Studies in Computer Gameplay — Booth 19*i*

Lindsay Grace, *Miami University*

The computer game software with which we interact on a daily basis not only entertains us, it trains us into specific patterns. Critical Gameplay is a design practice which endeavors to expose and redesign the patterns to which standard gameplay subscribes. The ongoing project seeks to identify the dominant values, philosophies and problem solving models reinforced by computer games and provides prototypical alternates to those standards.

The Elocuter: I Must Remind You We Live in Dada Times — Booth18*i*

Fabian Winkler, Shannon McMullen, *Purdue University*

The Elocuter is a sonification device that attaches via suction cup to a computer screen. It translates newspaper headlines about the global economic crisis into spoken words, composed of impossible sequences of allophones similar to a Dada poem. The project references poetic experiments of the Dada movement of the 1910/20s, specifically the play with language as a way to respond to a seemingly irrational political and cultural context. Finally, this project can be placed in the history of combining human and machine components into instruments for performance.

The EmotiChair - An Interactive Crossmodal Tactile Music Exhibit — Booth 35*i*

Maria Karam, Carmen Branje, Gabe Nesploi, Norma Thompson, Frank Russo, Deborah Fels, *Ryerson University*

The Emoti-Chair is a sensory substitution system that brings a high-resolution audio-tactile version of music to the body. The system can be used to improve music accessibility for deaf or hard of hearing people, while offering everyone the chance to experience sounds as tactile sensations. The model human cochlea (MHC) is the sensory substitution system that drives the Emoti-Chair. Music can be experienced as a tactile modality, revealing vibrations that originate from different instruments and sounds spanning the audio frequency spectrum along multiple points of the body. The system uses eight separate audio-tactile channels to deliver sound to the body, and provides an opportunity to experience a broad range of musical elements as physical vibrations.

Exploring Interfaces to Species Identification — Booth 36*i*

Sean White, Steven Feiner, *Columbia University*

We have developed several prototype user interfaces for botanical species identification and data collection across a diversity of platforms including Tablet PC, Ultra Mobile PC (UMPC), Apple iPhone, Augmented Reality, and Microsoft Surface. In our demonstration, we show UMPC and iPhone user interfaces, discuss the commonalities and distinctions across the different interfaces, and invite visitors to explore these differences. Our prototypes address several issues of interest to the CHI community including mobile interfaces, interfaces to object recognition, and visualization.

The Generative Visual Renku Project: Integrating Multimedia Semantics, Animation, and User-Interface Design — Booth 32*i*

Kenny Chow, *The Hong Kong Polytechnic University*
D. Fox Harrell, *Georgia Institute of Technology*

Generative Visual Renku (GVR), a new genre of visual interactive/generative art form is inspired by Japanese renku poetry and generative contemporary art. GRIOT, a system for composing generative and interactive multimedia discourse, is used to semantically constrain generated output both visually and conceptually. GVR utilizes GRIOT to implement constraints for visual composition, revealing new technical and aesthetic challenges. Since modular animated graphical systems are ubiquitous in computing culture, ranging from avatars to GUIs, GVR works pose a contribution to a breadth of HCI research and to the development of new theory and technology for integrating AI and the arts.

iFeel_IM: Innovative Real-Time Communication System with Rich Emotional and Haptic Channels — Booth 38*i*

Dzmitry Tsetserukou, Alena Neviarouskaya, *University of Tokyo*
Helmut Prendinger, *National Institute of Informatics, Japan*
Mitsuru Ishizuka, *University of Tokyo, Japan*
Susumu Tachi, *Keio University, Japan*

The motivation behind our work is to enrich social interaction and emotional involvement of the users of online communication media. iFeel_IM! users can not only exchange messages but also emotionally and physically feel the presence of the communication partner (e.g., family member, friend, or beloved person).

Interactive Learning with Simon the Robot — Booth 14*i*

Andrea Lockerd-Thomaz, Maya Cakmak, Crystal Chao, *Georgia Institute of Technology*

There is currently a surge of interest in having robots leave the labs and factory floors to help solve critical issues facing our society, ranging from eldercare to education. We have many problems to solve before general-purpose robots can function in, inherently social, dynamic human environments. A critical issue is that we will not be able to pre-program robots with every skill they will need to play a useful role in society; robots will need the ability to interact and learn new things 'on the job.' The goal of our research is to enable robots to learn new tasks and skills from everyday people. We focus on the key point that the robot learning by demonstration problem takes place within a social structure that can guide and constrain the learning problem. We believe that addressing this point will be essential for developing systems that can learn from everyday people that are not experts in Machine Learning or Robotics.

Layered Surveillance - A Collaborative Interactive Art Installation — Hanover A

Annabel Manning, *New Media Artist*
Celine Latulipe, *University of North Carolina at Charlotte*

t Annabel Manning explores the world of immigration and identity, and explores imagery related to border crossings and surveillance. Computer scientist Celine Latulipe explores embodied, collaborative interaction. The intersection of these two worlds leads to research in embodied collaborative interaction and an interactive art exhibit in which participants can explore both static images through interactive layers, and moving video through interactive surveillance lenses. Participants can explore alone or with others, using gyroscopic mice to control different aspects of the artwork. The participants are led, through interaction, to contemplate the (in)visibility of the immigrant and the agency of surveillance.

Pinch-the-Sky Dome: Freehand Multi-Point Interactions with Immersive Omni-Directional Data — Booth 17*i*

Hrvoje Benko, Andrew D. Wilson, *Microsoft Research*

Pinch-the-Sky Dome is a large immersive installation where several users can interact simultaneously with omni-directional data inside of a tilted geodesic dome. Our system consists of an omni-directional projectorcamera unit in the center of the dome. The projector is able to project an image spanning the entire 360 degrees and a camera is used to track freehand gestures for navigation of the content. The interactive demos include: 1) the exploration of the astronomical data provided by World Wide Telescope, 2) social networking 3D graph visualizations, 3) immersive panoramic images, and 4) 360 degree video conferencing. We combine speech commands with freehand pinch gestures to provide a highly immersive and interactive experience to several users inside the dome, with a very wide field of view for each user.

Recognizing Shapes and Gestures Using Sound as Feedback — Booth 22*i*

Javier Sanchez, Jaroslaw Kapuscinski, *Stanford University*

The system is based on the idea of relating spatial representations to sound. The shapes are predefined and the user has no access to any visual information. The user interacts with the system using a universal pointer device, as a mouse or a pen tablet, or the touch screen of a mobile device. While exploring the space using the pointer device, sound is generated, which pitch and intensity vary according to a strategy. Sounds are related to spatial representation, so the user has a sound perception of shapes and gestures. They can be easily followed with the pointer device, using the sound as only reference.

Robotany: Breeze — Booth 34*i*

Jill Coffin, *Georgia Institute of Technology*

Breeze is a roboticized live Japanese maple. Breeze senses and responds to human presence and movement through a variety of technological mechanisms. Its eye is a 360-degree, catadiotrophic lens positioned above the canopy. Its compound ears are a custom-built ultrasonic sensor array below the canopy. Shape memory alloys form gross and fine muscular systems. Breeze is part of an art research program titled Robotany, which uses techno-organic artifacts to understand aspects of human interaction with technology.

Visible and Controllable RFID Tags — Booth 33*i*

Nicolai Marquardt, *University of Calgary*
Alex S. Taylor, Nicolas Villar, *Microsoft Research Cambridge UK*
Saul Greenberg, *University of Calgary*

Radio frequency identification (RFID) tags containing privacy-sensitive information are increasingly embedded into personal documents such as passports and driver's licenses. The problem is that people are often unaware of the security and privacy risks associated with RFID, likely because the technology remains largely uncontrollable for the individual. To mitigate this problem, we developed a collection of novel yet simple and inexpensive alternative tag designs to make RFID visible and controllable.

Weight-Shifting Mobiles: Automatic Balancing in Mobile Phones — Booth 37*i (1 of 3)*

Fabian Hemmert, Susann Hamann,Matthias Löwe, Josefine Zeipelt, Gesche Joost, *Deutsche Telekom Laboratories*

We present a new type of interaction support for mobile phones: Automatic balancing through weight-shift. The weight-shift in mobile phones could be used as to change the device's balancing behavior. The question that this technology can help us to explore is how our interaction with mobile phones in everyday life could change, once devices were able to actively change the way we hold them in our hands.

Weight-Shifting Mobiles: Two-Dimensional Gravitational Displays in Mobile Phones — Booth 37*i (2 of 3)*

Fabian Hemmert, Susann Hamann, Matthias Löwe, Josefine Zeipelt, Gesche Joost, *Deutsche Telekom Laboratories*

We present a novel type of haptic display for usage in mobile phones. It changes the gravitational properties of the device by shifting an internal weight along two axes. Its utility is explored in a performance study, in which users were estimating positions of the device's actuated center of gravity. The users also participated in qualitative studies: A questionnaire that assessed the perceived quality of interacting with the device, and an interview in which they described their experiences with the weight-shifting mobile. Furthermore, we suggest three domains of application in which the system may be of benefit: Augmenting digital content with physical mass, ambient displays, and haptically augmented wayfinding.

Shape-Changing Mobiles: Tapering in Two-Dimensional Deformational Displays — Booth 37*i (3 of 3)*

Fabian Hemmert, Susann Hamann,Matthias Löwe, Josefine Zeipelt, Gesche Joost, *Deutsche Telekom Laboratories*

We present a novel haptic actuation system for mobile phones: Two-dimensional tapering through an actuated back plate. We proposes this type of shape-change for various applications, e.g. for ergonomically actuating the shape itself, displaying internal contents, and pointing to entities located outside the device. A user study was conducted in which the accuracy of perceiving the two-dimensional tilt of the phone's back plate is measured, as well as results from a questionnaire and a user interview. The results indicate that two-dimensional shape change may be a suitable addition to existing mobile phone technology.

CHI 2010 MEDIA SHOWCASE PERFORMANCES

CHI Media Showcase performances bring human-computer interaction to electrifying live music, video, and dance performances. Come see how these performers use new interfaces in these strikingly creative artistic works.

Bioluminescence

R. Luke Dubois, *Polytechnic Institute of New York University*
Lesley Flanigan

Bioluminescence is a performance by R. Luke DuBois and Lesley Flanigan that explores the modality of human voice. The voice has a unique role in our musical culture, bridging the linguistic and the semiotic in a way that transcends instrumentality through a highly personal embodiment of musicianship. DuBois and Flanigan investigate the possibilities of the improvised voice in tandem with electroacoustic processing. The interplay between the two performers (one singing, one processing) engages the metaphor of the voice as impulse and the computer as filter, creating a dense palette of evocative sounds and images derived entirely from the voice of the singer. Using custom software written by DuBois, Flanigan's voice is restructured live and in real time through spectral processing. While the two performers partake in a "dialogue" of sounds and words, the changing shape of the voice is traced visually through live video, leaving trails that evoke the memory of voice. These visuals act as a sonogram, allowing us to see what is heard in relation to how we are listening.

The Biomuse Trio

Eric Lyon, *Queen's University Belfast, UK*

The Biomuse Trio is computer chamber music for violin, computer and biomuse. The violinist performs conventionally; the only sensor used is a microphone to capture its sound. The computer produces all of its sound through processing of violin sounds captured during performance. The performance of the computer sound is controlled by the gestures of the biomusician, measured with on-body sensors. The musical composition consists of precisely sequenced events for violinist and biomusician, as well as performance environments that are explored through improvisation.

Critical Point

Roger Dannenberg, *Carnegie Mellon University, USA*
Tomas Laurenzo, *Universidad de la República, Uruguay*

Critical Point is written for solo cello and interactive computer music system with two to four channel sound system and computer animation. The cellist plays from a score, and the computer records and transforms the cello sounds in various ways. Graphics and video are also projected. The computer-generated graphics are affected by audio from the live cellist. Critical Point is written in memory of the artist Rob Fisher.

Everybody to the Power of One, for Soprano T-stick

D. Andrew Stewart, Joseph Malloch, *McGill University, Canada*

We present a live solo concert performance of an original piece of music, *Everybody to the Power of One*, written for the soprano T-Stick digital musical instrument. Like other digital musical instruments, the T-Stick enables the reincorporation of performer gesture as the main source of control in computer- based music making. A brief description of the instrument development, gesture- sound mapping and performance practice is given, followed by an introduction to the compositional motivation and materials of the piece. *Everybody to the power of one* is the fourth musical composition created for the T-Stick by composer and performer D. Andrew Stewart.

Exploring the Design Space in Technology-Augmented Dance (Dance.Draw)

Celine Latulipe, Sybil Huskey, David Wilson, *University of North Carolina at Charlotte, USA*
Mike Wirth, *Queens University of Charlotte, USA*
Berto Gonzalez, Arthur Carroll, Melissa Word, Erin Carroll, Vikash Singh, *University of North Carolina at Charlotte, USA*
Danielle Lottridge, *University of Toronto, Canada*

This performance is part of an ongoing Dance.Draw project at the University of North Carolina at Charlotte, which investigates lightweight methods for integrating dance motion with interactive visualizations and enhancing audience interaction with dance.

Posthorn

Ben Neill, *Ramapo College, USA*
Bill Jones, *First Pulse Projects, USA*

Posthorn is a live performance piece by Ben Neill and Bill Jones for Neill's self- designed mutantrumpet/interactive computer system. The work is titled after and based on the "posthorn solo," a section of the third movement of Gustav Mahler's Symphony No. 3, originally composed in 1898. Posthorn represents the most advanced interactive techniques and ideas that have emerged out of their collaboration which began in the mid 1990's. While their projects have taken on various forms, all of the work they have created together is concerned with merging sound and visual media through live interactive performance technologies.

Radio Healer

Christopher Martinez, Lisa Tolentino, Randy Kemp, *Arizona State University, urbanSTEW, USA*

This performance reflects upon the indigenous cultural implications of consumer technologies such as the Internet, mobile handheld devices, and personal computers, and how this relates to the effects of these technologies upon the lived experiences of all people. ***Radio Healer*** achieves this through the tactical appropriation and adaptive reuse of consumer technologies by indigenous peoples, along with the expression of indigenous media through sustainable cross-cultural partnerships between peoples of diverse backgrounds. The motivation of our collaborative work is to appropriate and express electronic technology in order to recognize the sovereign rights of indigenous peoples.

The Reactable Concert: Tangible and Tabletop Music Performance

Sergi Jorda, *Universitat Pompeu Fabra, Reactable Systems, Spain*

We present the Reactable, a new electronic musical instrument with a simple and intuitive tabletop interface that turns music into a tangible and visual experience. The Reactable is built upon a tabletop interface, which is controlled by manipulating tangible acrylic pucks on its surface. By rotating and connecting these pucks on the Reactable's translucent and luminous round surface, performers can combine different elements like synthesizers, sample loops or control elements in order to create a unique and flexible composition. As soon as any puck is placed on the Reactable's surface, it is illuminated and starts to interact with the other neighboring pucks, according to their positions and proximity. These interactions are visible on the table surface that acts as a screen, giving instant feedback about what is currently going on, turning music into something visible and tangible.

Sawtooth: Interactive Clarity and Aesthetic Complexity

Christopher Burns, *University of Wisconsin-Milwaukee, USA*

Sawtooth is an improvised multimedia performance. A performer's gestures are captured by a video camera, and translated into both music and animation. The size, location, and frequency of gestures correlate to the complexity and intensity of sound and image.

Shadows No. 4: Belly Dance and Interactive Electroacoustic Musical Performance

Aurie Y. Hsu, Steven T. Kemper, *University of Virginia, USA*

Shadows No. 4 is a piece for a tribal-fusion belly dancer, wireless sensor network, and electronics. The movement vocabulary is derivative of Raqs al-Sharqi, commonly known as *danse orientale* (Middle Eastern dance). This dance form involves slow and languid movement and controlled isolations. The piece experiments with notions of gesture (dance and musical) in the performance of electroacoustic music. During the performance, sensors translate the dancer's movements into subtle and salient variations of the sonic texture.

Shimon: An Interactive Improvisational Robotic Marimba Player

Guy Hoffman, Ryan Nikolaidis, Gil Weinberg, *Georgia Institute of Technology, USA*

Shimon is an autonomous marimba-playing robot designed to create interactions with human players that lead to novel musical outcomes. The robot combines music perception, interaction, and improvisation with the capacity to produce melodic and harmonic acoustic responses through choreographic gestures. We developed an anticipatory action framework, and a gesture-based behavior system, allowing the robot to play improvised Jazz with humans in synchrony, fluently, and without delay. In addition, we built an expressive non-humanoid head for musical social communication.

"Sxratch" for Metasaxophone

Matthew Burtner, CEMI, *University of Virginia, USA*

Sxratch (2006) is a musical composition and interactive performance work created for the Metasaxaphone, an augmented instrument invented and built by the composer in 1999. The Metasaxaphone is one of the earliest augmented instruments still in regular use today. The piece uses the interface to control interactive computer sound software and robots.

■ CHI 2010 MEDIA SHOWCASE VIDEO PROGRAM

Tuesday Evening
18:30 – 20:00
Centennial 2

COGKNOW Day Navigator: The System in Daily Life

Johannes Boer, *Novay, The Netherlands*

In this project, people with dementia and their caregivers were asked to describe their problems in daily life. With their information, we developed integrated solutions to help people with dementia experience greater autonomy and an enhanced quality life.

ContraVision: Presenting Contrasting Visions of Future Technology

Blaine A. Price, Clara Mancini, Yvonne Rogers, Arosha K. Bandara, *The Open University, UK*
Tony Coe, *Two Cats Can Productions, UK*
Adam N. Joinson, *The University of Bath, UK*
Jeffrey Lay, *The Open University, UK*
Bashar Nuseibeh, *The Open University and University of Limerick, UK*

How can we best explore the range of users' reactions when developing future technologies that may be controversial, such as personal healthcare systems? Our approach in ContraVision uses futuristic videos, or other narrative forms, that convey both negative and positive aspects of the proposed technology for the same scenarios. This work presents a new methodology for eliciting reactions to future technology using contrasting positive and negative representations to elicit elusive concerns such as privacy and identity.

Counterlines: a Duet for Piano and Pen Display

Javier Sanchez, Jaroslaw Kapuscinski, *Stanford University, USA*

Counterlines is a duet for Disklavier and Wacom Cintiq, in which both performers generate audiovisual materials that relate to each other contrapuntally. In the described studies, the pianist generates graphic lines while playing music and the graphic performer generates piano lines by drawing. To reinforce the clarity of relationships between visual contours all graphic elements are projected on a single screen.

Exploring Information Spaces by Using Tangible Magic Lenses in a Tabletop Environment

Martin Spindler, Raimund Dachselt, *Otto-von-Guericke-University of Magdeburg, Germany*

To solve the challenge of exploring large information spaces on interactive surfaces such as tabletops, we developed an optically tracked, lightweight, passive display (magic lens) that provides elegant three-dimensional exploration of rich datasets. This can either be volumetric, layered, zoomable, or temporal information spaces, which are mapped onto the physical volume above a tabletop. By moving the magic lens through the volume, corresponding data is displayed, thus serving as a window into virtuality. Hereby, various interaction techniques are introduced, which especially utilize the lens' height above a tabletop in a novel way (e.g. for zooming or displaying information layers).

Gest - Exploring Gestural Interaction

Ankur Sardana, Abhijit Bairagi, *Honeywell, India*

Imagine returning home from a hard days work, plopping down on a favorite beanbag and tuning into a sports channel simply by pointing at a football lying around and then to the television. Imagine calling up the car service station by pointing your mobile phone to your car. Imagine pointing an mp3 player to a poster of Sting (a popular musician) on the wall to play his songs. We imagined… and called it Gest.

Mirrored Message Wall: Sharing Between Real and Virtual Space

Jung-Ho Yeom, Beng-Kiang Tan, *National University of Singapore, Singapore*

The Mirrored Message Wall is a public display to promote social communication and use participation. It exists in both physical and virtual space and is a bridge to connect users between the real and virtual worlds.

Open Columns

Omar Khan, *Center for Architecture and Situated Technologies, USA*

This project examines the use of composite urethane elastomers for constructing responsive structures at an architectural scale. It explains the underlying material research and design criteria for constructing deployable columns that are responsive to carbon dioxide (CO2) emissions and are used to reconfigure and pattern the space of inhabitation.

The Proximity Toolkit and ViconFace: The Video

Rob Diaz-Marino, Saul Greenberg, *University of Calgary, Canada*

Proximity Toolkit is a toolkit that simplifies the exploration of interaction techniques based on proximity and orientations of people, tools, and large digital surfaces. ViconFace is a playful demonstration application built atop of this toolkit. A cartoon face on a large display tracks a person moving around it, where it visually and verbally responds to that person's proximity, orientation and wand use. The accompanying video illustrates all this in action.

'STEPS': Walking on the Music, Moving with Light Breathing

Yoonjung Hong, Jaesung Jo, Yoonhee Kim, Tek-Jin Nam, *Korea Advanced Institute of Science and Technology, South Korea*

Recently calm technology has been widely applied. Many cases help to enhance social intimacy among close people. Particularly, the area of family members has opportunities to support feeling of connectedness. We aim to investigate of implication through case study of calm technology to support social interaction. We suggested a mutual communication system; Steps, it supports emotional communion in short time separation. It consists of an attachable device for parents and shoes for children. It helps remote and non-verbal communication in a shopping context. We achieved to solve the worry of safety and fear, curiosity issues by sharing their steps. It is also sublimated from daily activities to pleasurable interaction. It suggested a possibility to extend the application of calm technology.

Tongue Music

Hye Yeon Nam, Carl DiSalvo, *Georgia Institute of Technology, USA*

In the Tongue Music project, I examine a performance-instrumental that makes use of the human tongue to yield amorous sounds, either by solo using a primary tongue controller or as a duet (The Sound of a Kiss) pairing a tongue controller and a receiver. I describe the design of the system and how the participants use the technology in a creative way to produce music.

Implementation - The Tongue Music interface has two components: a customized headset that functions as sensor receiver and a magnet that provides sensor input: magnetic field sensors are attached to the end of the headset, positioned in front of the mouth and the participant affixes a magnet to her tongue with Fixodent. As the participant moves her tongue, this creates varying magnetic fields, which are used to generate a variety of rhythmic tunes. Tongue Music can be played by one participant. But as with kissing, the performance is more engaging when two participants share the interface. When there are two performers, one person wears the headset and the other attaches the magnet to her tongue. The performers then kiss to create sounds as a collaborative affair. Through this interaction, a kiss is translated into music.

Hardware/Software - Hall Effect Sensors communicate the magnet's movement to an Arduino microcontroller. A computer runs Processing software which captures the input data and passes it on to Pure Data via OSC (open sound control). I convert signal to sound in Pure Data software. The system triggers six minor and major notes as well as ambient sound. The musical composition is determined by how far one's tongue is away from the other's lips/tongue and the couple's style of kissing.

Conclusion - Tongue Music: The Sound of a Kiss can be thought of as a sonic representation of the abstract concept of love. Love is a complex emotion, so representing it is a daunting task. Most of us agree that kissing is a natural expression of affection. I hope experiences like Tongue Music: The Sound of a Kiss can reveal and expand the affectionate bond between people.

Whole Body Large Wall Display Interfaces

Garth Shoemaker, *University of British Columbia, Canada*
Takayuki Tsukitani, Yoshifumi Kitamura, *Osaka University, Japan*
Kellogg S. Booth, *University of British Columbia, Canada*

This video demonstrates an application that uses a body-centric approach to support interaction with very large wall displays. The design is centered on a virtual body model that represents the users in the context of the workspace, relative to one another as well as to the display(s). This concept of body-centric interaction serves both as a design philosophy and an implementation approach and is both general and powerful. Our approach is general because if the model is detailed enough, a broad range of interaction techniques can be implemented. It is powerful because it opens up an entire class of new interaction techniques: those that depend on properties of a user's body, such as arm or hand pointing direction, head direction, or body location or orientation. The video highlights some of the body-centric interaction techniques that we believe are of value based on how people use their bodies in the everyday world.

WoW Pod

Catherine Vaucelle, *MIT Media Laboratory, USA*
Steve Shada, Marisa Jahn, USA

WOW Pod is an immersive architectural solution for the advanced massive online role-playing gamer that provides and anticipates all life needs. Inside, the player finds him/herself comfortably seated in front of the computer screen with easy-to-reach water, pre-packaged food, and a toilet conveniently placed underneath a built-in throne. When hungry, the player selects a food item and scans it in. WOW Pod then physically adjusts a hot plate to cook the item for the correct amount of time and temperature. The virtual character then jubilantly announces the status of the meal to both the player and the other individuals playing online. When the food is ready, the system automatically puts the character in AFK (Away From Keyboard) mode to provide both player and avatar a moment to eat. When the player resumes playing, he/she might just discover his/her character's behavior is affected by the food consumed in real life, such as sluggish from overeating or alternately exuberant and energetic. We aim to provoke a discussion about the inducement of pleasure, fantasy fulfillment, the mediation of intimacy in a socially-networked gaming paradigm such as MORPG between researchers, designers and artists.

ZOOZbeat - Mobile Music reCreation

Gil Weinberg, *Georgia Institute of Technology, USA*
Mark Godfrey, Andrew Beck, *ZOOZ Mobile, USA*

ZOOZbeat is a gesture-based Music reCreation studio. It is designed to provide users with expressive and creative access to music making on the go. ZOOZbeat users can compose user-generated songs based on generic beats in different styles or remix and modify commercially licensed songs. To play notes or trigger musical loops, players can shake the phone or tap the screen. Users can also record voice or other audio input into their songs and utilize tilt and shake movements to manipulate and share the music in a group.

CHI 2010 POSTERS

Poster will be spotlighted in the poster area of the Commons (Grand Hall) and the Grand Hall Lobby. Poster authors are scheduled to stand by their posters during times indicated below. Please visit the posters each day, see all the excited work being done, and discuss new ideas with poster presenters.

Tuesday (10:30-11:30)
- Work-In-Progress: WIP 001-096 (Commons)
- Student Research Competition: SRC 01-21 (Lobby)

Wednesday (10:30-11:30)
- Work-In-Progress: WIP 097-183 (Commons)
- Student Design Competition: SDC 01-12 (Lobby)
- Select Workshops (Lobby)

Thursday (10:30-11:30)
- Doctoral Consortium: DC 01-24 (Commons)

STUDENT DESIGN COMPETITION

SDC01 | BuddyBearings: A Person-to-Person Navigation System
George Hayes, Dhawal Mujumdar, Thomas Schluchter, *University of California, Berkeley,* USA

SDC02 | Mibo: A Mobile Application to Encourage Walking
Malhar Gupta, Kathryn McCurdy, Honor Potvin, Eunkyoung Song, Xiaowen Zhang, *University of Michigan School of Information,* USA

SDC03 | WAND: Walk Around Navigation Device for Children with Autism Spectrum Disorders
Brytton Bjorngaard, Mikako Matsunga, Haiqiong Che, Jeritt Tucker, Mariam Melkumyan, *Iowa State University,* USA

SDC04 | Soto | Social Walking Through School Initiated Challenges
Joran Damsteegt, Lilian Admiraal, *Eindhoven University of Technology, The Netherlands*

SDC05 | Explorawalk: Encouraging Families to Walk Together
Louise Macaulay, Emmanuelle Cerovic-Bunn, Siobhan Kavanagh, *Dun Laoghaire Institute of Art Design & Technology, I.A.D.T, Ireland*

SDC06 | Living Avatar Network for Outsourcing Experiences and Realities: Real Time Interface In Interactive walk
Inosha Wickrama, Muhammad Farkhan B Salleh, Muhammad Shafi B Rafie, Xiu Fang Tan, Giang Thanh Vu, *National University of Singapore, Singapore*

SDC07 | Urban Green Line
Mikkel Hansen, Tina Dhingra, Mayra Frank Maria Jeansson, Pratima Kalmadi, Asya Arabadzhiyska, Eric Liu, *Central Saint Martins College of Art and Design, UK*

SDC08 | Night Beacon: A System to Empower people to Walk With Confidence at Night
Michael Harmala, Taeho Ko, Anna Jonsson, Garima Garg, Yi-Wei Chia, *University of Michigan,* USA

SDC09 | Walking Our 'Hood'
Michelle Lui, Andrea Tavchar, Christina Kim, *University of Toronto, Canada*

SDC10 | World of WALKcraft: Motivating physical activity in hardcore gamers
Josh Coe, Katia Serralheiro, *Carnegie Mellon University, USA*
Clinton Jorge, Ruben Gouveia, *University of Madeira, Portugal*

SDC11 | FootPal- Build Social Rivalries Around Maintainable Walking Habits.
Ko-Hsun Huang, Chen-Hao Wuang, Chong-Hong Ling, *National Chiao Tung University NCTU, Taiwan*

SDC12 | Zombies and the Art of Making People Walk
Hannah Jaber, Brian Auron, Jeffrey Brock, *University of Minnesota, Twin Cities (UMNTC),* USA

STUDENT RESEARCH COMPETITION

SRC01 | Himawari: Shape Memory Alloy Motion Display for Robotic Representation
Akira Nakayasu, *Graduate School of Design, Kyushu University, Japan*

SRC02 | Constant Connectivity, Selective Participation: Mobile-Social Interaction of Students and Faculty
Dana Rotman, *University of Maryland, USA*

SRC03 | Remote Web Browsing Via the Phone With TeleWeb
Yevgen Borodin, *Stony Brook University,* USA

SRC04 | Health Shelf: Interactive Nutritional Labels
Sapna Bedi, *University of British Columbia, Canada*
Javier Diaz Ruvalcaba, *University of Victoria, Canada*
Zoltan Foley-Fisher, Noreen Kamal, Vincent Tsao, *University of British Columbia, Canada*

SRC05 | DragonFly: Spatial Navigation for Lecture Videos
Christian Corsten, *RWTH Aachen University, Germany*

SRC06 | iPhone as a Physical Activity Measurement Platform
Yuichi Fujiki, *University of Houston,* USA

SRC07 | Exploring Iterative and Parallel Human Computation Processes
Greg Little, *MIT, USA*

SRC08 | A Task-Focused Approach to Support Sharing and Interruption Recovery in Web Browsers
Mohan Raj Rajamanickam, Russell MacKenzie, Billy Lam, Tao Su, *University of British Columbia, Canada*

SRC09 | Mudpad: Fluid Haptics for Multitouch Surfaces
Yvonne Jansen, *RWTH Aachen University, Germany*

SRC10 | RUMU Editor: A Non-WYSIWYG Web Editor for Non-Technical Users
Eleanor Poley, *Knox College, USA*

SRC11 | Building Common Ground and Reciprocity Through Social Network Games
D. Yvette Wohn, Yu-hao Lee, Jieun Sung, Torger Bjornrud, *Michigan State University, USA*

SRC12 | Usability and Strength in Click-Based Graphical Passwords
Elizabeth Stobert, *Carleton University, Canada*

SRC13 | SequenceBook: Interactive Paper Book Capable of Changing the Storylines by Shuffling Pages
Hiroki Yamada, *University of Tokyo, Japan*

SRC14 | Get the Picture? Evaluating Interfaces through Children's Drawings
Cristina Sylla, *University of Minho, Portugal*

SRC15 | Cobra: Flexible Displays for MobileGaming Scenarios
Zi Ye, Hammad Khalid, *Queen's University Human Media Lab, Canada*

SRC16 | gBook: An e-Book Reader with Physical Document Navigation Techniques
Jesse Burstyn, M. Anson Herriotts, *Queen's University, Canada*

SRC17 | PIM-Mail: Consolidating Task and Email Management
Jan-Peter Krämer, *RWTH Aachen University, Germany*

SRC18 | Exploring Reactive Access Control
Richard Shay, Michelle L. Mazurek, Peter F. Klemperer, *Carnegie Mellon University, USA*
Hassan Takabi, *University of Pittsburgh, USA*

SRC19 | Cookie Confusion: Do Browser Interfaces Undermine Understanding?
Aleecia M. McDonald, *Carnegie Mellon, USA*

SRC20 | Buddy Bearings: A Person-To-Person Navigation System
George T. Hayes, Dhawal Mujumdar, Thomas Schluchter, *University of California, Berkeley, USA*

SRC21 | Effects of Cognitive Aging on Credibility Assessment of Online Health Information
Qingzi Vera Liao, *University of Illinois at Urbana Champaign, USA*

DOCTORAL CONSORTIUM

DC01 | Exploring Mobile Technologies for the Urban Homeless
Christopher Le Dantec, *Georgia Institute of Technology, USA*

DC02 | Evaluating the Social Acceptability of Multimodal Mobile Interactions
Julie Rico, *University of Glasgow, UK*

DC03 | HCI Methods for Including Adults With Disabilities in the Design of CHAMPION
Suzanne Prior, *University of Dundee, UK*

DC04 | Heads-Up Engagement With the Real World: Multimodal Techniques for Bridging the Physical-Digital Divide
Simon Robinson, *Swansea University, UK*

DC05 | Supporting Medical Communication with a Multimodal Surface Computer
Anne Marie Piper, *University of California, San Diego, USA*

DC06 | Interfaces beyond the Surface: A Structural Approach to Embodiment
Fabian Hemmert, *Deutsche Telekom Laboratories, Germany*

DC07 | Lowering the Barrier to Applying Machine Learning
Kayur Patel, *University of Washington, USA*

DC08 | The Role of Tangible Technologies for Special Education
Taciana Pontual Falcao, *Institute of Education London, UK*

DC09 | Improved Window Switching Interfaces
Susanne Tak, *University of Canterbury, New Zealand*

DC10 | Making Sense of Activity Lifelog Data
Matthew Lee, *Carnegie Mellon University, USA*

DC11 | Emotions Experienced By Families Living at a Distance
Hyesook Kim, *University of York, UK*

DC12 | Studying and Tackling Temporal Challenges in Mobile HCI
Joel Fischer, *The Mixed Reality Laboratory, University of Nottingham, United Kingdom*

DC13 | Supporting and Transforming Leadership in Online Creative Collaboration
Kurt Luther, *Georgia Institute of Technology, USA*

DC14 | Real-Time Interaction With Supervised Learning
Rebecca Fiebrink, *Princeton University, USA*

DC15 | Design Methods on the Move: Culture and Knowledge in HCI
Lilly Irani, *University of California, Irvine, USA*

DC16 | Cultural Versioning of Mobile User Experience
Qifeng Yan, *NOKIA DESIGN, Finland*

DC17 | Supporting Effective User Navigation in Digital Documents
Jennifer Pearson, *Swansea University, UK*

DC18 | Thanatosensitively Designed Technologies for Bereavement Support
Michael Massimi, *University of Toronto, Canada*

DC19 | Understanding Digital Technical Practices around Creative Handwork
Daniela Rosner, *School of Information, UC Berkeley, USA*

DC20 | LiquidText: Active Reading through Multitouch Document Manipulation
Craig Tashman, *Georgia Institute of Technology, USA*

DC21 | Designing and Evaluating Voice-Based Virtual Communities
Neil Patel, *Stanford University, USA*

DC22 | TAVR: Temporal-aural-visual Representation for Representing Imperceptible Spatial Information
Minyoung Song, *University of Michigan, USA*

DC23 | Building Interpretable Discussions for Effective Large-Scale Public Engagement
Travis Kriplean, *University of Washington, USA*

DC24 | Grassroots Heritage: A Social Media Probes Approach to Heritage Study and Design in a Participatory Age
Sophia Liu, *University of Colorado at Boulder, USA*

WORK IN PROGRESS

WIP001 | Vote-O-Graph: A Dishonest Touchscreen Voting System
Andrea L. Mascher, Paul T. Cotton, Douglas W. Jones, *The University of Iowa, USA*

WIP002 | Gestalt Theory, Engagement and Interaction
Robert Fraher, James Boyd-Brent, *University of Minnesota, USA*

WIP003 | Maintaining Levels of Activity using a Haptic Personal Training Application
Huimin Qian, Ravi Kuber, Andrew Sears, *UMBC, USA*

WIP004 | Social and Spatial Interactions: Shared Co-Located Mobile Phone Use
Andrés Lucero, Jaakko Keränen, Tero Jokela, *Nokia Research Center, Finland*

WIP005 | Natural Interaction Enhanced Remote Camera Control for Teleoperation
Dingyun Zhu, *CSIRO / ANU, Australia*
Tom Gedeon, *ANU, Australia*
Ken Taylor, *CSIRO, Australia*

WIP006 | The Complexity of Perception of Image Distortion: An Initial Study
Yuzhen Niu, *Shandong University, China*
Feng Liu, *University of Wisconsin - Madison, USA*
Xueqing Li, *Shandong University, China*
Michael Gleicher, *University of Wisconsin - Madison, USA*

WIP007 | CheekTouch: An Affective Interaction Technique while Speaking on the Mobile Phone
Young-Woo Park, Chang-Young Lim, Tek-Jin Nam, *Korea Advanced Institute of Science and Technology, South Korea*

WIP008 | Making Policy Decisions Disappear into the User's Workflow
Alan H. Karp, Marc Stiegler, *Hewlett-Packard Laboratories, USA*

WIP009 | MotionBeam: Designing for Movement with Handheld Projectors
Karl D. D. Willis, *Carnegie Mellon University, USA*
Ivan Poupyrev, *Disney Research, Pittsburgh, USA*

WIP010 | Service Users' Views of a Mainstream Telecare Product - the Personal Trigger
Andrea Taylor, Stefan Agamanolis, *Distance Lab, UK*

WIP011 | GridOrbit Public Display: Providing Grid Awareness in a Biology Laboratory
Juan David Hincapié Ramos, Aurélien Tabard, Jakob Bardram, Tomas Sokoler, *IT University of Copenhagen, Denmark*

WIP012 | Hybrid Groups of Printed and Digital Documents on Tabletops: A Study
Jürgen Steimle, Mohammadreza Khalilbeigi, Max Mühlhäuser, *Technische Universität Darmstadt, Germany*

WIP013 | CloudRoom: A Conceptual Model for Managing Data in Space and Time
Lucia Terrenghi, *Vodafone GROUP R&D, Germany*
Kátia Serralheiro, *Carnegie Mellon University, USA*
Thomas Lang, Martin Richartz, *Vodafone GROUP R&D, Germany*

WIP014 | Who Said What When? Capturing the Important Moments of a Meeting
Shoou-Jong Yu, Ted Selker, *Carnegie Mellon Silicon Valley, USA*

WIP015 | Using Word Spotting to Evaluate ROILA: A Speech Recognition Friendly Artificial Language
Omar Mubin, Christoph Bartneck, Loe Feijs, *Eindhoven University of Technology (TU/e), The Netherlands*

WIP016 | Integrated Model Based on the Psychology of Active/Non-active Computer Users: Activating Technology Holdouts
Momoko Nakatani, Takehiko Ohno, Ai Nakane, Yurika Katagiri, *Human Interaction Project, NTT Cybersolutions Laboratories, Japan*
Shuji Hashimoto, *Waseda University, Japan*

WIP017 | PhotoSense: Emergent Semantics Based Approach To Image Annotation
Rohit Ashok Khot, Kannan Srinathan, *International Institute of Information Technology Hyderabad, India*

WIP018 | Eye Tracking Analysis of Preferred Reading Regions on the Screen
Georg Buscher, Ralf Biedert, *DFKI, Germany*
Daniel Heinesch, *University of Kaiserslautern, Germany*
Andreas Dengel, *DFKI, Germany*

WIP019 | Pot à Musique: Tangible Interaction with Digital Media.
Steven Strachan, *Orange Labs, France*
Benjamin Mazoin, *ENSCI-Les ateliers, France*
Agnès Gimeno, *Orange Labs, France*

WIP020 | Auditory Menus Are Not Just Spoken Visual Menus: A Case Study of "Unavailable" Menu Items
Myounghoon Jeon, Siddharth Gupta, Benjamin K. Davison, Bruce N. Walker, *Georgia Institute of Technology, USA*

WIP021 | Video Microblogging: Your 12 Seconds of Fame
Nis Bornoe, *University of Copenhagen, Denmark*
Louise Barkhuus, *University of California, San Diego, USA*

WIP022 | Tagliatelle: Social Tagging to Encourage Healthier Eating
Conor Linehan, Mark Doughty, Shaun Lawson, Ben Kirman, *University of Lincoln, UK*
Patrick Olivier, Paula Moynihan, *Newcastle University, UK*

WIP023 | Green Tracker: A Tool for Estimating the Energy Consumption of Software
Nadine Amsel, Bill Tomlinson, *University of California, Irvine, USA*

WIP024 | Touch Your Way: Haptic Sight for Visually Impaired People to walk with Independence
Ji-Won Song, *Korea Advanced Institute of Science and Technology, Republic of Korea*
Sung-Ho Yang, *Inje, Kookmin University, Republic of Korea*

WIP025 | MobiGaze: Development of a Gaze Interface for Handheld Mobile Devices
Takashi Nagamatsu, *Kobe University, Japan*
Michiya Yamamoto, Hiroshi Sato, *Kwansei Gakuin University, Japan*

WIP026 | A Multi-Touch Enabled Steering Wheel - Exploring the Design Space
Max Pfeiffer, Dagmar Kern, *University Duisburg-Essen, Germany*
Johannes Schönning, *German Research Center for Artificial Intelligence, Germany*
Tanja Döring, *University Duisburg-Essen, Germany*
Antonio Krüger, *German Research Center for Artificial Intelligence, Germany*
Albrecht Schmidt, *University Duisburg-Essen, Germany*

WIP027 | Mobile Questionnaires for User Experience Evaluation
Heli Väätäjä, *Tampere University of Technology, Finland*
Virpi Roto, *Nokia Research Center, Finland*

WIP028 | Trouble-spotting Photoshows: Capturing Everyday HCI Experiences
Jill Palzkill Woelfer, *Philips Healthcare University of Washington, USA*

WIP029 | Scaffolding Science Inquiry in Museums with Zydeco
Alex Kuhn, Clara Cahill, Chris Quintana, Elliot Soloway, *University of Michigan, USA*

WIP030 | Socially Cued Mental Models
Abhay Sukumaran, Clifford Nass, *Stanford University, USA*

WIP031 | Location Aware Applications to Support Mobile Food Vendors in the Developing World
Rahmad Dawood, Jude Yew, Steven J. Jackson, *University of Michigan, USA*

WIP032 | SocialCRC: A Social- and Context-Aware Rendezvous Coordination System
Chuang-wen You, *Academia Sinica, Taiwan*
Yi-Ling Chen, *National Taiwan University, Taiwan*
Wen-Huang Cheng, *HTC Corp., Taiwan*
Ming-Syan Chen, *National Taiwan University, Academia Sinica, Taiwan*
Shan-An Tsai, *HTC Corp., Taiwan*

WIP033 | Video Play: Playful Interactions in Video Conferencing for Long-Distance Families with Young Children
Sean Follmer, *MIT, USA*
Hayes Raffle, Janet Go, *NOKIA Research, USA*
Hiroshi Ishii, *MIT, USA*

WIP034 | First-Person Cooking: A Dual-Perspective Interactive Kitchen Counter
Sarah Mennicken, Thorsten Karrer, Peter Russell, Jan Borchers, *RWTH Aachen University, Germany*

WIP035 | Navigation for the Blind through Audio-Based Virtual Environments
Jaime Sánchez, Mauricio Sáenz, *University of Chile, Chile*
Alvaro Pascual-Leone, Lotfi Merabet, *Harvard Medical School, USA*

WIP036 | Interface-to-face: Sharing Information with Customers in Service Encounters
Ohad Inbar, Noam Tractinsky, *Ben-Gurion University of the Negev, Israel*

WIP037 | On Improving Application Utility Prediction
Joshua Hailpern, *University of Illinois, USA*
Nicholas Jitkoff, *Google, USA*
Joseph Subida, Karrie Karahalios, *University of Illinois at Urbana Champaign, USA*

WIP038 | The Tiresias Effect: Feedforward using Light versus Temperature in a Tangible User Interface
Katie Seaborn, Alissa Antle, *Simon Fraser University (SFU), Canada*

WIP039 | Computational Objects and Expressive Forms: A Design Exploration
Heekyoung Jung, Youngsuk L. Altieri, Jeffrey Bardzell, *Indiana University, USA*

WIP040 | BioTISCH: the Interactive Molecular Biology Lab Bench
Florian Echtler, *Technische Universität München, Germany*
Maximilian Häussler, *University of Manchester, United Kingdom*
Gudrun Klinker, Technische Universität München, Germany

WIP041 | Digitizer Auditory Graph: Making Graphs Accessible to the Visually Impaired
Stephen Choi, Bruce N.Walker, *Georgia Institute of Technology, USA*

WIP042 | Free-Space Pointing with Constrained Hand Movements
Theophanis Tsandilas, Emmanuel Dubois, Mathieu Raynal, *University of Toulouse, France*

WIP043 | The Effect of Preference Elicitation Methods on the User Experience of a Recommender System
Bart P. Knijnenburg, Martijn C. Willemsen, *Eindhoven University of Technology, The Netherlands*

WIP044 | Mobile Product Customization
Sven Gehring, Markus Löchtefeld, Johannes Schöning, *German Research Center for Artificial Intelligence, Germany*
Dominic Gorecky, *Technical University of Kaiserslautern, Germany*
Peter Stephan, Antonio Krüger, *German Research Center for Artificial Intelligence, Germany*
Michael Rohs, *Deutsche Telekom Laboratories, Germany*

WIP045 | Toward an Ecological Sensibility: Tools for Evaluating Sustainable HCI
M. Six Silberman, Bill Tomlinson, *University of California Irvine, USA*

WIP046 | MusicJacket: The Efficacy of Real-time Vibrotactile Feedback for Learning to Play the Violin
Rose M. G. Johnson, Janet van der Linden, Yvonne Rogers, *The Open University, UK*

WIP047 | Human Performance Modeling for All: Importing UI Prototypes into CogTool
Brett N. Harris, Bonnie E. John, *Carnegie Mellon University, USA*
Jonathan Brezin, *IBM Watson Research Center, USA*

WIP048 | Designing for Children: A Fear Therapy Tool
Marco de Sá, Luís Carriço, João Faria, Isabel Sá, *University of Lisbon, Portugal*

WIP049 | Improving Remote Collaboration through Side-by-Side Telepresence
Paul Tanner, Varnali Shah, *Carnegie Mellon University Alumni, USA*

WIP050 | Real Time Eye Movement Identification Protocol
Do Hyong Koh, Sandeep Munikrishne Gowda, Oleg V. Komogortsev, *Texas State University-San Marcos, USA*

WIP051 | Re-Connect: Designing Accessible Email Communication Support for Persons with Aphasia
Abdullah Al Mahmud, Jean-Bernard Martens, *Eindhoven University of Technology (TU/e), The Netherlands*

WIP052 | Cleanly - Trashducation Urban System
Inbal Reif, *kitchen97.com, Israel*
Florian Alt, *University of Duisburg-Essen, Germany*
Juan David Hincapié Ramos, *IT University of Copenhagen, Denmark*
Katerina Poteriaykina, *University of Haifa, Israel*
Johannes Wagner, *University of Augsburg, Germany*

WIP053 | Extended KLM for Mobile Phone Interaction: A User Study Result
Hui Li, *Institute of Human Factors & Ergonomics, P.R. China*
Ying Liu, *Nokia Research Center, P. R. China*
Jun Liu, *Tsinghua University, P. R. China*
Xia Wang, *Nokia Research Center, P. R. China*
Yujiang Li, Pei-Luen Patrick Rau, *Tsinghua University, P. R. China*

WIP054 | Graaasp: A Web 2.0 Research Platform for Contextual Recommendation with Aggregated Data
Evgeny Bogdanov, Sandy El Helou, Denis Gillet, Christophe Salzman, Stéphane Sire, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

WIP055 | New Media and Folk Music in Rural India
Neha Kumar, Tapan S. Parikh, *University of California, Berkeley, USA*

WIP056 | Mobile Interaction Techniques for Interrelated Videos
Jochen Huber, Jürgen Steimle, Max Mühlhäuser, *Technische Universität Darmstadt, Germany*

WIP057 | Design by Physical Composition for Complex Tangible User Interfaces
Tanja Döring, Bastian Pfleging, *University of Duisburg-Essen, Germany*
Christian Kray, *Newcastle University, UK*
Albrecht Schmidt, *University of Duisburg-Essen, Germany*

WIP058 | Personal, Public: Using DIY to Explore Citizen-Led Efforts in Urban Computing
Solomon Bisker, Mark Gross, Donald Carter, Eric Paulos, Stacey Kuznetsov, *Carnegie Mellon University, USA*

WIP059 | Making Friends by Killing Them: Using Location-Based Urban Gaming to Expand Personal Networks
Josh Coe, *Carnegie Mellon University, USA*
Monchu Chen, University of Madeira, *Portugal*

WIP060 | Stimulating Everyday Creativity: Harnessing the Potential of Customizable UIs
Sampada Sameer Marathe, *Pennsylvania State University, USA*

WIP061 | Design of a Web-Based Therapist Tool to Promote Emotional Closeness
Junia Coutinho Anacleto, *Federal University of São Carlos, Brazil*
Sidney Fels, *University of British Columbia, Canada*
Johana María Rosas Villena, *Federal University of São Carlos, Brazil*

WIP062 | Comparing Awareness and Distraction between Desktop and Peripheral-vision Displays
Lindsay Reynolds, Jeremy Birnholtz, Eli Luxenberg, *Cornell University, USA*
Carl Gutwin, *University of Saskatchewan, Canada*
Maryam Mustafa, *Cornell University, USA*

WIP063 | TriggerHunter: Designing An Educational Game For Families With Asthmatic Children
Hwajung Hong, Hee Young Jeong, Rosa I. Arriaga, Gregory D.Abowd, *Georige Institute of Technology, USA*

WIP064 | Asthmon: Empowering Asthmatic Children's Self-Management with a Virtual Pet
Hee Rin Lee, Wassa R. Panont, Brian Plattenburg, Jean-Pierre de la Croix, Dilip Patharachalam, Gregory Abowd, *Georgia Institute of Technology, USA*

WIP065 | Castling Rays' a Decision Support Tool for UAV-Switching Tasks
Talya Porat, Tal Oron-Gilad, *Ben-Gurion University of the Negev, Israel*
Jacob Silbiger, *Synergy Integration Ltd., Israel*
Michal Rottem-Hovev, *Israel Air Force, Israel*

WIP066 | Game-y Information Graphics
Nicholas Diakopoulos, *Rutgers University, USA*

WIP067 | Towards Predicting Web Searcher Gaze Position from Mouse Movements
Qi Guo, Eugene Agichtein, *Emory University, USA*

WIP068 | GColl: Enhancing Trust in Flexible Group-to-Group Videoconferencing
Petr Slovák, Pavel Troubil, Petr Holub, *Masaryk University, Czech Republic*

WIP069 | Laugh Enhancer using Laugh Track Synchronized with the User's Laugh Motion
Shogo Fukushima, Yuki Hashimoto, *The University of Electronic Communications, Japan*
Takashi Nozawa, *Mejiro University, Japan*
Hiroyuki Kajimoto, *The University of Electronic Communications, Japan*

WIP070 | TOPAOKO: Interactive Construction Kit
Kuan-Ju Wu, Mark D. Gross, *Carnegie Mellon University, CMU, USA*

WIP071 | The Haptic Wheel: Design & Evaluation of a Tactile Password System
Andrea Bianchi, *Korean Advanced Institute of Science and Technology, Korea*
Ian Oakley, *University of Madeira, Portugal*
Jong Keun Lee, Dong Soo Kwon, *Korean Advanced Institute of Science and Technology, Korea*

WIP072 | iLight: Information flashLight on Objects using Handheld Projector
Sunjun Kim, *KAIST, South Korea*
Jaewoo Chung, *MIT, USA*
Alice Oh, *KAIST, South Korea*
Chris Schmandt, Ig-Jae Kim, *MIT, USA*

WIP073 | VibroGlove: An Assistive Technology Aid for Conveying Facial Expressions
Sreekar Krishna, Shantanu Bala, Troy McDaniel, Stephen McGuire, Sethuraman Panchanathan, *Arizona State University, USA*

WIP074 | Eyebrowse: Real-Time Web Activity Sharing and Visualisation
Max Van Kleek, Brennan Moore, Christina Xu, David R. Karger, *MIT, USA*

WIP075 | Social Network Games: Exploring Audience Traits
Jieun Sung, Torger Bjornrud, Yu-Hao Lee, D. Yvette Wohn, *Michigan State University, USA*

WIP076 | Encouraging Awareness of Peers' Learning Activities using Large Displays in the Periphery
K. K. Lamberty, Katherine Froiland, Jason Biatek, Stephen Adams, *University of Minnesota, Morris, USA*

WIP077 | Opportunities for Computing to Support Healthy Sleep Behavior
Eun Kyoung Choe, Julie A. Kientz, Sajanee Halko, Amanda Fonville, Dawn Sakaguchi, Nathaniel Watson, *University of Washington, USA*

WIP078 | A Survey to Assess the Potential of Mobile Phones as a Learning Platform for Panama
Elba del Carmen Valderrama Bahamondez, Albrecht Schmidt, *Universität Duisburg-Essen, Germany*

WIP079 | Measuring User Experience Of Websites: Think Aloud Protocols and an Emotion Word Prompt List
Helen Petrie, John Precious, *University of York, UK*

WIP080 | Improving the Form Factor of a Wrist-Based Mobile Gesture Interface
James Deen, Seungyon Lee, BoHao Li, Thad Starner, *Georgia Institute of Technology, USA*

WIP081 | Sharing Awareness Information Improves Interruption Timing and Social Attraction
Dai Tang, Jeremy Birnholtz, *Cornell University, USA*

WIP082 | Event Maps: A Collaborative Calendaring System for Navigating Large-Scale Events
Jingtao Wang, *University of California Berkeley, USA*
Danny Soroker, Chandra Narayanaswami, *IBM T.J. Watson Research Center, USA*

WIP083 | Guidelines for a Costume Designer's Workbench
Rachael Bradley, Jennifer Preece, *University of Maryland, USA*

WIP084 | Touch2Annotate - Generating Better Annotations with Less Human Effort on Multi-Touch Interfaces
Yang Chen, Jing Yang, Scott Barlowe, Dong H. Jeong, *University of North Carolina at Charlotte, USA*

WIP085 | 3D User Interface Combining Gaze and Hand Gestures for Large-Scale Display
ByungIn Yoo, Jae-Joon Han, Changkyu Choi, Kwonju Yi, Sungjoo Suh, Dusik Park, Changyeong Kim, *Samsung Electronics Co., LTD., Korea*

WIP086 | Exploring Social Dimensions of Personal Information Management with Adults with AD/HD
Jina Huh, Mark S. Ackerman, *University of Michigan, USA*

WIP087 | Kairos Chat: A Novel Text-Based Chat System that has Multiple Streams of Time
Kanayo Ogura, Yoko Matsumoto, Yoshiyuki Yamauchi, Kazushi Nishimoto, *Japan Advanced Institute Science and Technology, Japan*

WIP088 | How Do Users Interact with a Pet-Robot and a Humanoid?
Anja Austermann, *The Graduate University for Advanced Studies (SOKENDAI), Japan*
Seiji Yamada, *National Institute of Informatics, Japan*
Kotaro Funakoshi, Mikio Nakano, *Honda Research Institute, Japan*

WIP089 | MobiDev: A Mobile Development Kit for Combined Paper-based and In-situ Programming on the Mobile Phone
Bastian Pfleging, Elba del Carmen Valderrama Bahamondez, Albrecht Schmidt, Martin Hermes, Johannes Nolte, *Universität Duisburg-Essen, Germany*

WIP090 | Real-Time Eye Gaze Tracking With an Unmodified Commodity Webcam Employing a Neural Network
Weston Sewell, Oleg Komogortsev, *Texas State University San Marcos, USA*

WIP091 | Grip Sensing in Smart Toys: A Formative Design Method for User Categorization
Manohar Ganesan, Neil W. Russell, Rahul Rajan, Nathan Welch, Tracy L. Westeyn, Gregory D. Abowd, *Georgia Institute of Technology, USA*

WIP092 | DigestManga: Interactive Movie Summarizing through Comic Visualization
Hiroaki Tobita, *Sony CSL, Japan*

WIP093 | COMLEX: Visualizing Communication for Research and Saving Lives
William Billingsley, Cindy Gallois, Andrew Smith, Marcus Watson, *NICTA, Australia*

WIP094 | Behind the Scenes of Google Maps Navigation: Enabling Actionable User Feedback at Scale
Yelena Nakhimovsky, Andrew T. Miller, Tom Dimopoulos, Michael Siliski, *Google, USA*

WIP095 | Hands Free Mouse: Comparative Study on Mouse Clicks Controlled by Humming
Ondrej Polácek, Zdenek Míkovec, *Czech Technical University in Prague, Czech Republic*

WIP096 | Locked-out: Investigating the Effectiveness of System Lockouts to Reduce Errors in Routine Tasks
Jonathan Back, Duncan P. Brumby, Anna L. Cox, *University College London, UK*

WIP097 | The Effect of Avatar Realism of Virtual Humans on Self-Disclosure in Anonymous Social Interactions
Sin-Hwa Kang, Jonathan Gratch, *USC Institute for Creative Technologies, USA*

WIP098 | A Cross-Device Spatial Workspace Supporting Artifact-Mediated Collaboration in Interaction Design
Florian Geyer, Harald Reiterer, *University of Konstanz, Germany*

WIP099 | Learning Basic Dance Choreographies with different Augmented Feedback Modalities
Dieter Drobny, Jan Borchers, *RWTH Aachen University, Germany*

WIP100 | Designing for Collaboration: Improving Usability of Complex Software Systems
Mari-Klara Oja, *Bentley University, USA*

WIP101 | Arranging Touch Screen Software Keyboard Split-keys based on Contact Surface
Kentaro Go, Leo Tsurumi, *University of Yamanashi, Japan*

WIP102 | Remote Skincare Advice System Using Life-logs
Maki Nakagawa, Koji Tsukada, Itiro Siio, *Ochanomizu University, Japan*

WIP103 | Lightweight Selective Availability in Instant Messaging
Mirko Fetter, Julian Seifert, Tom Gross, *Bauhaus-University Weimar, Germany*

WIP104 | Understanding Information Sharing from a Cross-cultural Perspective
Yurong He, *Chinese Academy of Sciences, China*
Chen Zhao, *Microsoft Research Asia, China*
Pamela Hinds, *Stanford University, USA*

WIP105 | Enhancing Distributed Corporate Meetings with 'Lightweight' Avatars
N. Sadat Shami, Li-Te Cheng, Steven Rohall, Andrew Sempere, John Patterson, *IBM T.J. Watson Research Center, USA*

WIP106 | Investigation of Cultural Dependency in Mobile Technology and Older Adults
Sofianiza Abd Malik, Alistair D. N. Edwards, *University of York, United Kingdom*

WIP107 | Measuring Environments for Public Displays: A Space Syntax Approach
Sheep Dalton, Paul Marshall, *Open University, United Kingdom*
Ruth Conroy Dalton, *University College London, United Kingdom*

WIP108 | Evaluating Realistic Visualizations for Safety-related In-car Information Systems
Peter Fröhlich, Raimund Schatz, Peter Leitner, *Telecommunications Research Center (FTW), Austria*
Stephan Mantler, *Virtual Reality and Visualization Research Center (VRVis), Austria*
Matthias Baldauf, *Telecommunications Research Center (FTW), Austria*

WIP109 | Gen X and Y's Attitudes on Using Social Media Platforms for Opinion Sharing
Bernard J. Jansen, Kate Sobel, *The Pennsylvania State University, USA*
Geoff Cook, *myYearbook.com, USA*

WIP110 | Embedding Robotics in Civic Monuments for an Information World
Tarek H. Mokhtar, Keith Evan Green, Ian D. Walker, Tony Threatt, Vidya N. Murali, Akshay Apte, Sumod K. Mohan, *Clemson University, USA*

WIP111 | Wearable-Object-Based Interaction for a Mobile Audio Device
KwanMyung Kim, *Korea Advanced Institute of Science and Technology, Korea*
Dongwoo Joo, *Korea Science Academy of KAIST, Korea*
Kun-Pyo Lee, *Korea Advanced Institute of Science and Technology, Korea*

WIP112 | Behavioral Assessment and Visualization Tool
Deepak Jagdish, Abbas Attarwala, Ute Fischer, *Georgia Institute of Technology, USA*

WIP113 | Participatory Design for Sustainable Campus Living
Janet Davis, *Grinnell College, USA*

WIP114 | Enabling Cross-Device Interaction With Web History
Timothy Sohn, Koichi Mori, Vidya Setlur, *Nokia Research Center, USA*

WIP115 | PlayWrite: End-User Adaptable Games to Support Adolescent Mental Health
David Coyle, *University of Cambridge, United Kingdom*
Gavin Doherty, *Trinity College Dublin, Ireland*
John Sharry, *Mater Misericordiae Hospital, Ireland*

WIP116 | World-Wide Access to Geospatial Data by Pointing Through The Earth
Erika Reponen, Jaakko Keränen, Hannu Korhonen, *Nokia Research Center, Finland*

WIP117 | Leveraging Gesture and Voice Data to Improve Group Brainstorming
Deirdre Garrahan, Orit Shaer, Andreya Piplica, Kevin Gold, *Wellesley College, USA*

WIP118 | A Method to Get Rich Feedbacks from Users in an Interview for Design Concept Decision
Yoonjung Hong, Tek-Jin Nam, *Korea Advanced Institute of Science and Technology, South Korea*

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Mathias Lux, Christoph Kofler, *Klagenfurt University, Austria*
Oge Marques, *Florida Atlantic University, USA*

WIP120 | An Utterance Attitude Model in Human-Agent Communication: From Good Turn-taking to Better Human-Agent Understanding
Masahide Yuasa, Naoki Mukawa, Koji Kimura, Hiroko Tokunaga, Hitoshi Terai, *Tokyo Denki University, Japan*

WIP121 | Opportunities And Challenges For Mobile-Based Financial Services In Rural Uganda
Rachel Hinman, *Nokia Research Lab, USA*
Julius Matovu, *Makerere University, Uganda*

WIP122 | Beyond - Collapsible Tools and Gestures for Computational Design
Jinha Lee, Hiroshi Ishii, *MIT Media Laboratory, USA*

WIP123 | Using Concept Maps To Evaluate The Usability Of Apis
Jens Gerken, Hans-Christian Jetter, Harald Reiterer, *University of Konstanz, Germany*

WIP124 | Interaction Techniques for Hybrid Piles of Documents on Interactive Tabletops
Mohammadreza Khalilbeigi, Jürgen Steimle, Max Mühlhäuser, *Darmstadt University of Technology, Germany*

WIP125 | Bridging the Digital Divide One Tweet at a Time: Twitter-Enabled Devices for Family Communication
Joseph Nesbitt, AnnMarie Thomas, *University of St. Thomas, USA*

WIP126 | On Presenting Audio-Tactile Maps to Visually Impaired Users for Getting Directions
Devi Archana Paladugu, Zheshen Wang, Baoxin Li, *Arizona State University, USA*

WIP127 | Real Time Search User Behavior
Bernard J. Jansen, *The Pennsylvania State University, USA*
Gerry Campbell, Matthew Gregg, *Collecta, USA*

WIP128 | TAVR: Temporal-Aural-Visual Representation to Convey Imperceptible Spatial Information
Minyoung Song, Chris Quintana, *University of Michigan, USA*

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Bonnie E. John, *Carnegie Mellon University, USA*
John Thomas, Cal Swart, Jonathan Brezin, *IBM T.J. Watson Research Center, USA*

WIP130 | Designing a CD Augmentation for Mobile Phones
Niels Henze, Susanne Boll, *University of Oldenburg, Germany*

WIP131 | Heartbeats: A Methodology to Convey Interpersonal Distance through Touch
Troy McDaniel, Daniel Villanueva, Sreekar Krishna, Dirk Colbry, Sethuraman Panchanathan, *Arizona State University, USA*

WIP132 | Enhancing Navigation Skills through Audio Gaming
Jaime Sánchez, Mauricio Sáenz, *University of Chile, Chile*
Alvaro Pascual-Leone, Lotfi Merabet, *Harvard University, USA*

WIP133 | Pico-ing into the Future of Mobile Projector Phones
Max L. Wilson, Simon Robinson, Dan Craggs, Kristian Brimble, Matt Jones, *Swansea University, UK*

WIP134 | Text 2.0
Ralf Biedert, Georg Buscher, Sven Schwarz, Jörn Hees, Andreas Dengel, *DFKI GmbH, Germany*

WIP135 | Ubiquitous Drums: A Tangible, Wearable Musical Interface
Boris Smus, Mark D. Gross, *Carnegie Mellon University, USA*

WIP136 | Cultural Similarities and Differences in User-Defined Gestures for Touchscreen User Interfaces
Dan Mauney, Jonathan Howarth, Andrew Wirtanen, Miranda Capra, *HumanCentric, USA*

WIP137 | Empowering Products: Personal Identity through the Act of Appropriation
Binaebi Akah, Shaowen Bardzell, *Indiana University, USA*

WIP138 | Is a "Friend" a Friend? Investigating the Structure of Friendship Networks in Virtual Worlds
Brooke Foucault Welles, Anne Van Devender, Noshir Contractor, *Northwestern University, USA*

WIP139 | Facilitating Meetings with Playful Feedback
Ying Zhang, Marshall Bern, Juan Liu, Kurt Partridge, Bo Begole, Jim Reich, Bob Moore, *Palo Alto Research Center, USA*
Koji Kishimoto, *Fujistu, Japan*

WIP140 | Competitive Carbon Counting: Can Social Networking Sites Make Saving Energy More Enjoyable?
Derek Foster, *University of Lincoln, United Kingdom*
Mark Blythe, Paul Cairns, *University of York, United Kingdom*
Shaun Lawson, *University of Lincoln, United Kingdom*

WIP141 | Bodies, Boards, Clubs and Bugs: A Study of Bodily Engaging Artifacts
Jakob Tholander, *Stockholm University, Sweden*
Carolina Johansson, *Swedish Institute of Computer Science, Sweden*

WIP142 | Let Users Tell the Story: Evaluating User Experience with Experience Reports
Hannu Korhonen, Juha Arrasvuori, *Nokia Research, Finland*
Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, Finland*

WIP143 | MetAgora - A Meta-Community Approach to guide Users through the Diversity of Web Communities
Felix-Robinson Aschoff, Gerhard Schwabe, *University of Zurich, Switzerland*

WIP144 | Using Obstructed Theatre with Child Designers to Convey Requirements
Janet C. Read, Daniel Fitton, Emanuela Mazzone, *University of Central Lancashire, UK*

WIP145 | Does Underlining Links Help or Hurt?
Tom Tullis, Marisa Siegel, *Fidelity Investments, USA*

WIP146 | On the Retrospective Assessment of Users' Experiences Over Time: Memory or Actuality?
Evangelos Karapanos, Jean-Bernard Martens, *Eindhoven University of Technology, Netherlands*
Marc Hassenzahl, *Folkwang University, Germany*

WIP147 | Artex: Artificial Textures from Every-day Surfaces for Touchscreens
Andrew Crossan, John Williamson, Stephen Brewster, *University of Glasgow, UK*

WIP148 | Designing Graphical Interfaces for Design Rationale Search & Retrieval
Ying Liu, Yan Liang, Soon Chong Johnson Lim, *Hong Kong Polytechnic University, China*

WIP149 | pixSmix: Visual Ambiguity as a Means of Designing Interpersonal Connection
Kevin Makice, *Blue Collar Consulting, USA*

WIP150 | Squishy Circuits: A Tangible Medium for Electronics Education
Samuel Johnson, AnnMarie Thomas, *University of St. Thomas, USA*

WIP151 | Modality is the Message: Interactivity Effects on Perception and Engagement
S. Shyam Sundar, Qian Xu, Saraswathi Bellur, Jeeyun Oh, Haiyan Jia, *Pennsylvania State University, USA*

WIP152 | Interactive Diagram Layout
Sonja Maier, Mark Minas, *Universitaet der Bundeswehr Muenchen, Germany*

WIP153 | DocBlocks: Communication-minded Visualization of Topics in U.S. Congressional Bills
Yannick Assogba, Irene Ros, Matt Mckeon, *IBM Research, USA*

WIP154 | Investigating an Appropriate Design for Personal Firewalls
Fahimeh Raja, Kirstie Hawkey, Konstantin Beznosov, Kellogg S. Booth, *University of British Columbia, Canada*

WIP155 | Investigating User Account Control Practices
Sara Motiee, Kirstie Hawkey, Konstantin Beznosov, *University of British Columbia, Canada*

WIP156 | Sensing Human Activities With Resonant Tuning
Ivan Poupyrev, *Disney Research Pittsburgh, USA*
Zhiquan Yeo, *Disney Research Pittsburgh & Carnegie Mellon University, USA*
Josh Griffin, *Disney Research Pittsburgh, USA*
Scott Hudson, *Carnegie Mellon University, USA*

WIP157 | Toward a Computationally-Enhanced Acoustic Grand Piano
Andrew McPherson, Youngmoo Kim, *Drexel University, USA*

WIP158 | Tangible Spin Cube for 3D Ring Menu in Real Space
Hyeongmook Lee, Woontack Woo, *GIST U-VR Lab., South Korea*

WIP159 | Exploring Cultural Differences in Information Behavior Applying Psychophysiological Methods
Anita Komlodi, *UMBC, USA*
Károly Hercegfi, *Budapest University of Technology and Economics, Hungary*

WIP160 | UCom: Spatial Displays For Visual Awareness Of Remote Locations
Ana Luisa Santos, V. Michael Bove, Jr., *MIT Media Laboratory, USA*

WIP161 | Synthesizing Meaningful Feedback for Exploring Virtual Worlds using a Screen Reader
Bugra Oktay, Eelke Folmer, *University of Nevada Reno, USA*

WIP162 | Exploring Surround Haptics Displays
Ali Israr, Ivan Poupyrev, *Disney Research Pittsburgh, USA*

WIP163 | Reuse: Promoting Repurposing through an Online DIY Community
Benny Lin, Elaine M. Huang, *University of Calgary, Canada*

WIP164 | The Problem of Defining Values: A Lack of Common Ground Between Industry & Academia?
Amanda Rotondo, Nathan G. Freier, *Rensselaer Polytechnic Institute, USA*

WIP165 | Astrojumper: Motivating Children with Autism to Exercise Using a VR Game
Samantha Finkelstein, Andrea Nickel, Tiffany Barnes, Evan A. Suma, *University of North Carolina Charlotte, USA*

WIP166 | Graphemes: Self-Organizing Shape-Based Clustered Structures For Network Visualisations
Ross Shannon, *University College Dublin, Ireland*
Aaron Quigley, *University of Tasmania, Australia*
Paddy Nixon, *University College Dublin, Ireland*

WIP167 | Selective Function Of Speaker Gaze before and during Questions: Towards Developing Museum Guide Robots
Yoshinori Kobayashi, Takashi Shibata, Yosuke Hoshi, Yoshinori Kuno, Mai Okada, Keiichi Yamazaki, *Saitama University, Japan*

WIP168 | Communication and Computing in Health Facilities of Southwest Uganda
Melissa R. Ho, *University of California Berkeley, USA*

WIP169 | A Sketch Recognition Interface that Recognizes Hundreds of Shapes in Course-of-Action Diagrams
Tracy Hammond, Drew Logsdon, Joshua Peschel, Joshua Johnston, Paul Taele, Aaron Wolin, Brandon Paulson, *Texas A&M University, USA*

WIP170 | Gender and Role Differences in Family-Based Healthy Living Networks
Stephen Kimani, Nilufar Baghaei, Jill Freyne, Shlomo Berkovsky, Dipak Bhandari, Greg Smith, *CSIRO, Australia*

WIP171 | Remote Interaction for 3D Manipulation
Seungju Han, Hyunjeong Lee, Joonah Park, Wook Chang, Changyeong Kim, *Samsung Advanced Institute of Technology, South Korea*

WIP172 | Thermo-Message: Exploring the Potential of Heat as a Modality of Peripheral Expression
Wonjun Lee, Youn-kyung Lim, *KAIST, South Korea*

WIP173 | Human Social Response toward Humanoid Robot's Head and Facial Features
Jun Ki Lee, Cynthia Breazeal, *MIT, USA*

WIP174 | Generating Default Privacy Policies for Online Social Networks
Eran Toch, Norman M. Sadeh, Jason Hong, *Carnegie Mellon University, USA*

WIP175 | SNAG: Social Networking Games to Facilitate Interaction
Eve Powell, Samantha Finkelstein, Andrew Hicks, *University of North Carolina at Charlotte, USA*
Thomas Phifer, *Winthrop University, USA*
Sandhya Charugulla, Christie Thornton, Tiffany Barnes, Teresa Dahlberg, *University of North Carolina at Charlotte, USA*

WIP176 | The Effect of Eco-Driving System Towards Sustainable Driving Behavior
Heewon Lee, Woohun Lee, Youn-Kyung Lim, *Korea Advance Institute of Science and Technology, South Korea*

WIP177 | One-Press Control: A Tactile Input Method for Pressure-Sensitive Computer Keyboards
Staas de Jong, Dünya Kirkali, Hanna Schraffenberger, Jeroen Jillissen, Alwin de Rooij, Arnout Terpstra, *Leiden University, the Netherlands*

WIP178 | Indian Cultural Effects on User Research Methodologies
Jack Beaton, *Nokia, Inc., USA*
Ripul Kumar, *Kern Communications, India*

WIP179 | A Novel Method to Monitor Driver's Distractions
Avinash Wesley, Dvijesh Shastri, Ioannis Pavlidis, *University of Houston, USA*

WIP180 | Input Precision for Gaze-Based Graphical Passwords
Alain Forget, Sonia Chiasson, Robert Biddle, *Carleton University, Canada*

WIP181 | Classifying Web Queries by Topic and User Intent
Bernard J. Jansen, Danielle Jansen, *Pennsylvania State University, USA*

WIP182 | Designing a Touch-Screen SenseCam Browser to Support an Aging Population
Niamh Caprani, Aiden R. Doherty, Hyowon Lee, Alan F. Smeaton, Noel E. O'Connor, Cathal Gurrin, *Dublin City University, Ireland*

WIP183 | Modeling the Effect of Habituation on Banner Blindness as a Function of Repetition and Search Type: Gap Analysis for Future Work
Felix Portnoy, Gary Marchionini, *University of North Carolina Chapel Hill, USA*

Aldebaran Robotics – Booth 25

NAO is a humanoid robot developed and manufactured by Aldebaran Robotics, based in Paris, France. He's a 58 cm tall friendly robot that includes a computer and networking capability at its core. Delivered with a full set of development tools, NAO addresses the needs of universities and research labs around the world.

Bloomberg L. P. (Champion Sponsor) Booth 1

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.

CHI*Atlanta – Booth 30

A local chapter of SIGCHI, CHI*Atlanta is Atlanta's largest and most active forum for human computer interaction professionals. Learn more about us and get an insider's guide to the Atlanta area.

Create with Context – Booth 12

Create with Context is a Silicon Valley-based research, innovation and design company focused on everything digital. Working with companies like Yahoo!, Adobe, and Panasonic, we like to say that we make digital human.

Eye Tech Digital Systems – Booth 20

EyeTech develops flexible eye tracking hardware and software solutions. The new long distance eye gaze tracking system tracks a user's gaze from up to 6 feet away for screen navigation or for gaze research. EyeTech's free API enables developers to design custom eye tracking solutions.

Georgia Tech – Booth 31

The GVU Center at Georgia Tech brings together disciplines as diverse as Computing, Digital Media, Music, Psychology, and Industrial Design engaged in leading-edge research. Come learn about GVU and the breadth of educational opportunities at GT.

Google (Champion Sponsor) Booth 9

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, whether we are pushing the boundaries of our products, researching alternative energies, or devising new ways to interact with clients. Come by our booth, meet our engineers, demo some new products and learn about some of the great opportunities we have at Google.

John Wiley & Sons – Booth 23

Founded in 1807, John Wiley & Sons, Inc. is an independent, global publisher of print and electronic products. Wiley specializes in scientific and technical books, journals, textbooks and education materials, and professional and consumer books and subscription services. www.wiley.com

LC Technologies, Inc. – Booth 10

A range of eye tracking technologies: The EyeFollower that provides automatic eye acquisition, binocular tracking, and 0.45-degree gazepoint tracking accuracy throughout 20x12x15 inch volume. Also, an inexpensive plug-and-play system and state-of-the art NYAN analysis software.

Microsoft Corp. (Champion Sponsor) Booth 7 & 8

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.

MIT Press – Booth 29

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 – Booth 15

Morgan & Claypool Publishers presents Synthesis, an innovative information service for the research, development, and educational community in computer and information science. The exhibit includes new publications in our HCI and Information series, and demonstration of the digital library.

Morgan Kaufmann – Booth 26

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 3

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 4

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.

Samsung Electronics Co. LTD – Booth 5

The UX Center of Samsung Electronics presents its recent research results related to user experience and new interaction developments.

Seeing Machines Booth 13

faceLAB v5 delivers flexible eye tracking for CHI. faceLAB offers high fidelity eye tracking in both on-screen applications as well as 3D environments, such as simulators. Tightly integrated analysis tools deliver automated analysis of human attention and cognitive workload – in real time.

Smart Eye – Booth 2

Smart Eye AB provides eye tracking systems with two to six cameras, which can be mounted independently, to be adapted it to your planned experimental setup. It has a very high accuracy for head, eyelid and gaze tracking and the largest head box.

Springer – Booth 11

Stop by the Springer booth to get acquainted with our multi-format publishing model. Get hands-on experience with Springer ebooks on one of the world's largest STM content platforms, SpringerLink. Test drive highlights online, in print, and on ebook readers. Ask about your Springer *MyCopy*.

Taylor & Francis – Booth 6

With over 200 years publishing experience, international offices and over 1100 titles in print, Taylor & Francis is a world leading publisher of academic journals. All Taylor & Francis journals have their own web pages with full information - visit www.tandf.co.uk/journals/ for a closer look.

TechSmith Corporation – Booth 24

TechSmith provides usability testing software when and how you need it. You love your product, but does your customer? Conduct everything from usability testing to focus groups and in-depth interviews with Morae. Free trials and demos at our booth!

Tobii Technology – Booth 27 & 28

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!

UserZoom – Booth 16

UserZoom is the leading online user experience research company. We offer an on-demand software solution for businesses to manage and conduct sophisticated online research projects, such as remote usability tests, online surveys and card sorting studies.

Vancouver/CHI 2011 – Booth 21

Stop by the Vancouver booth and learn more about the site for CHI 2011. Next year's conference is in gorgeous, energetic, sophisticated Vancouver B.C., a city renowned for its innovation in 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."

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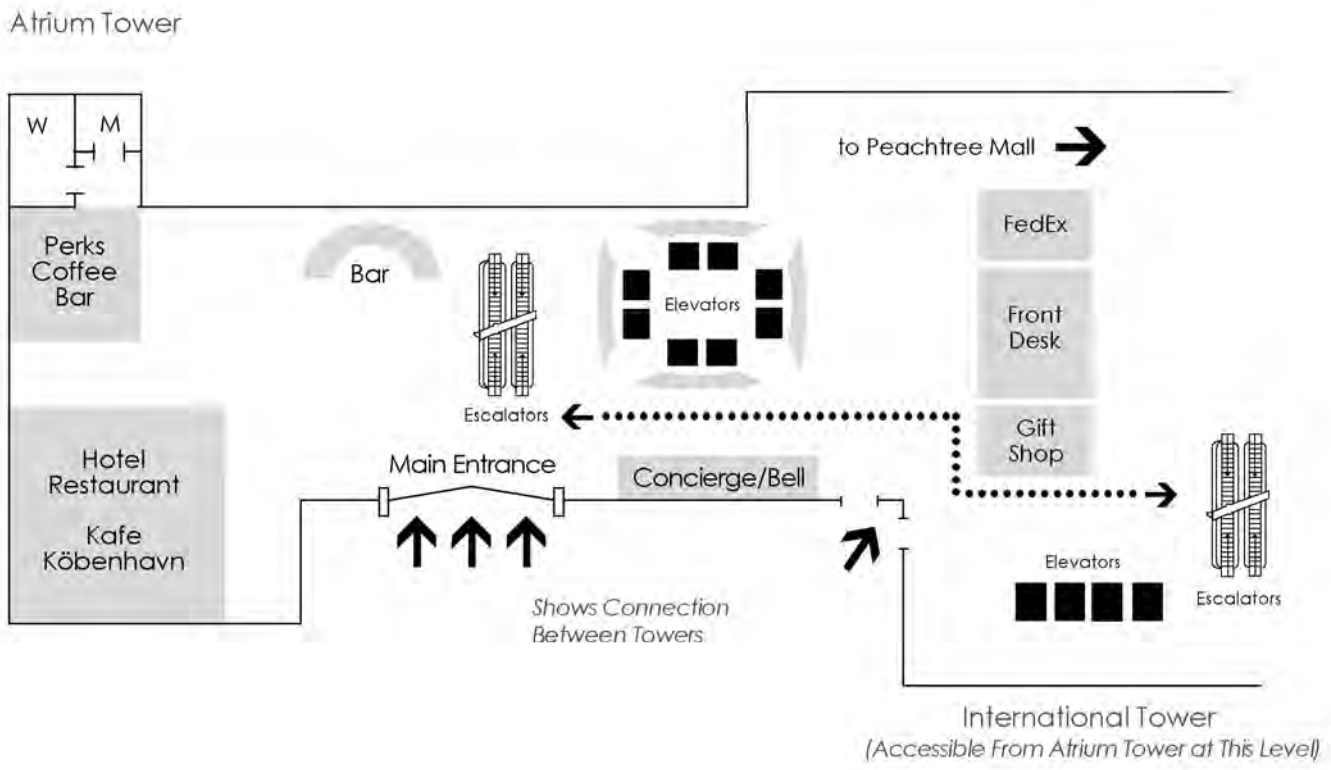
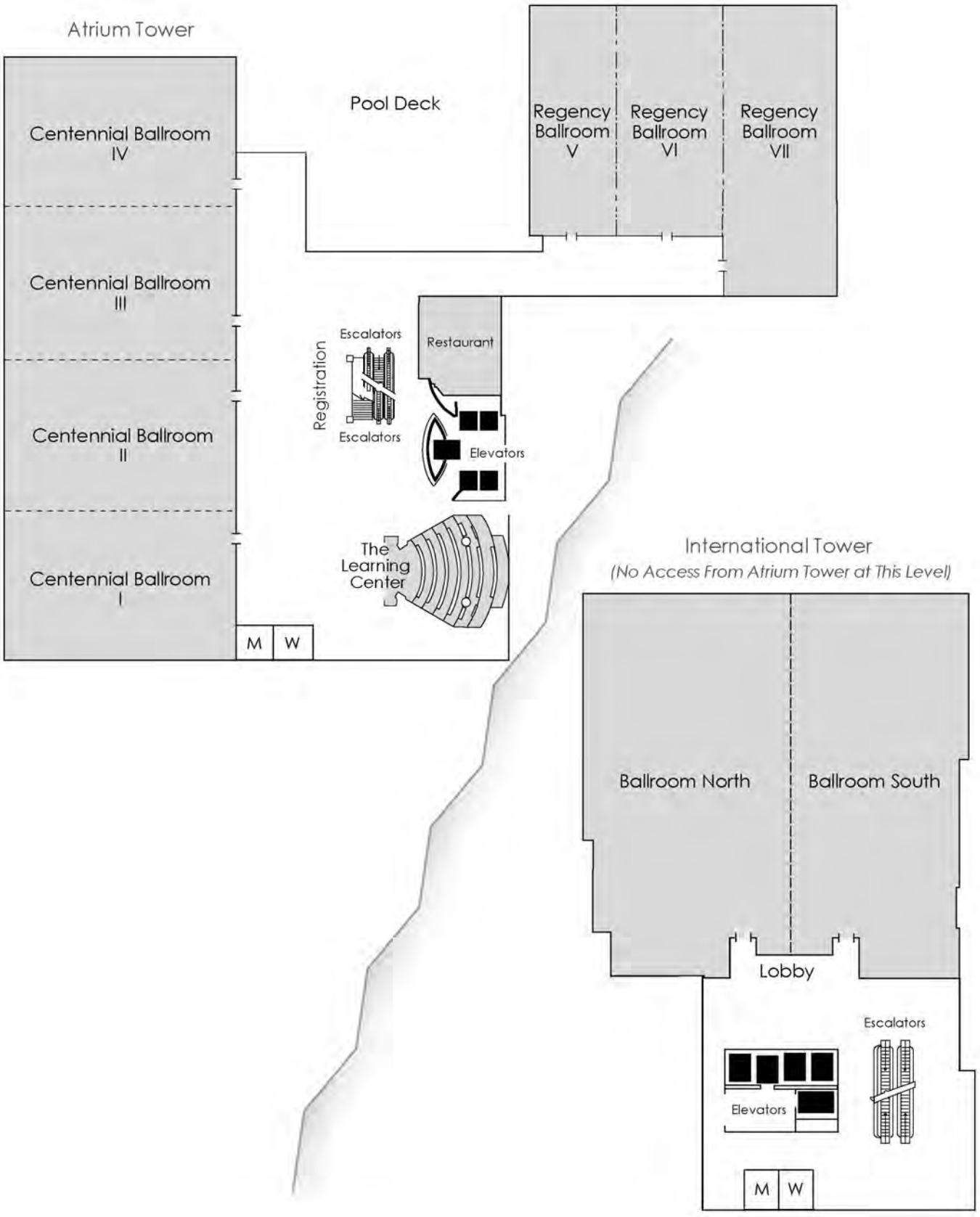


Lower Level 1: Ballroom Level



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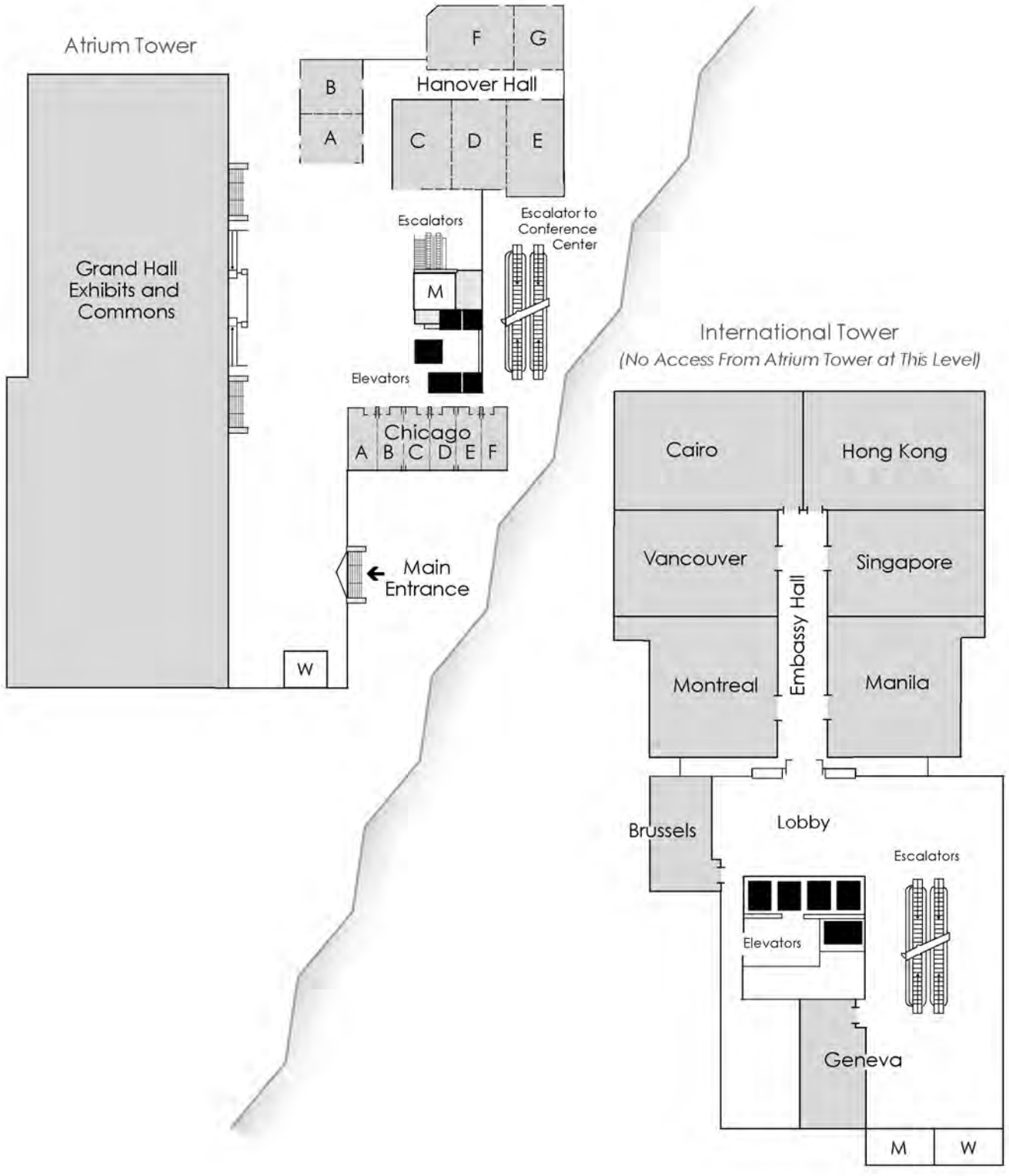

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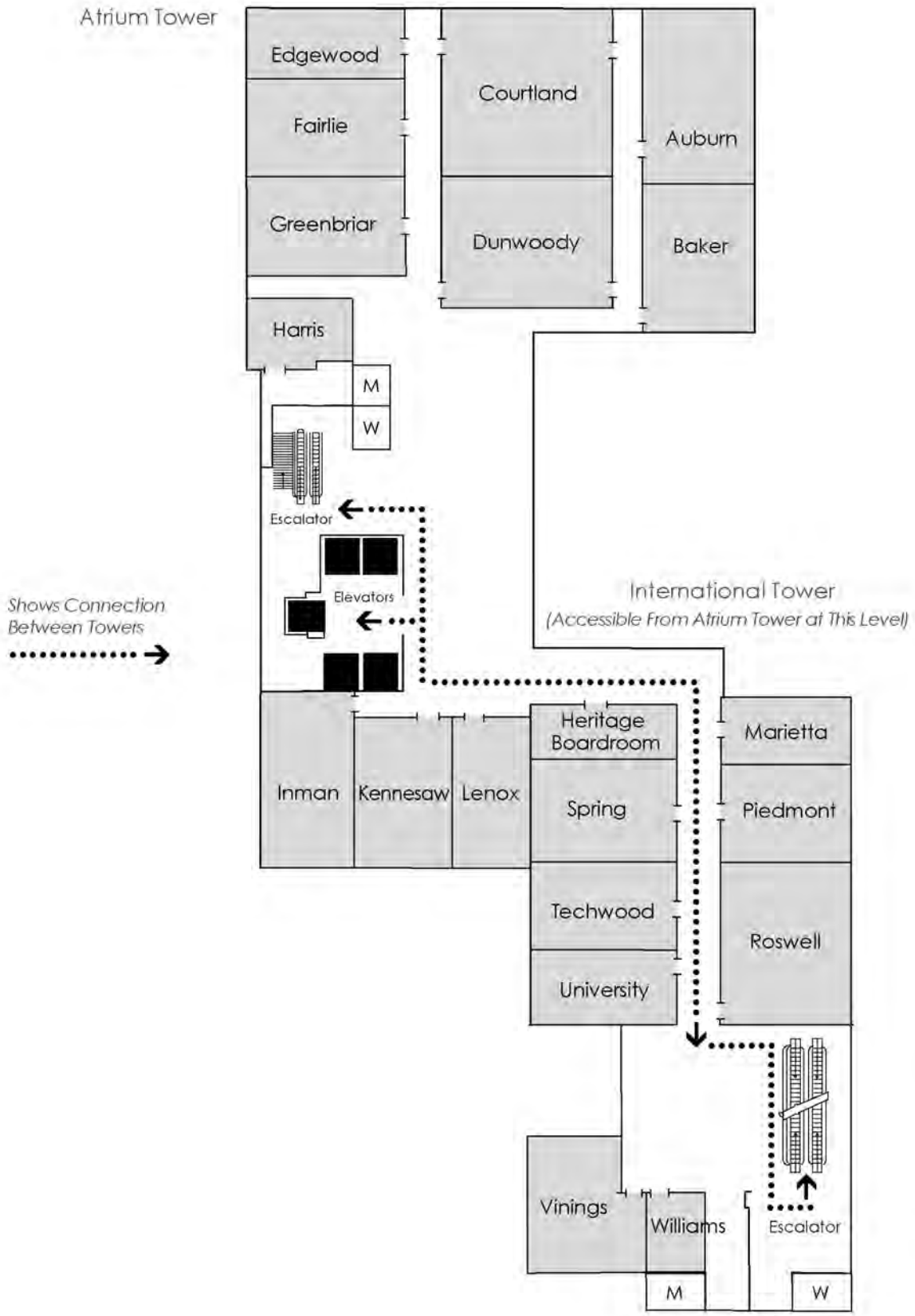
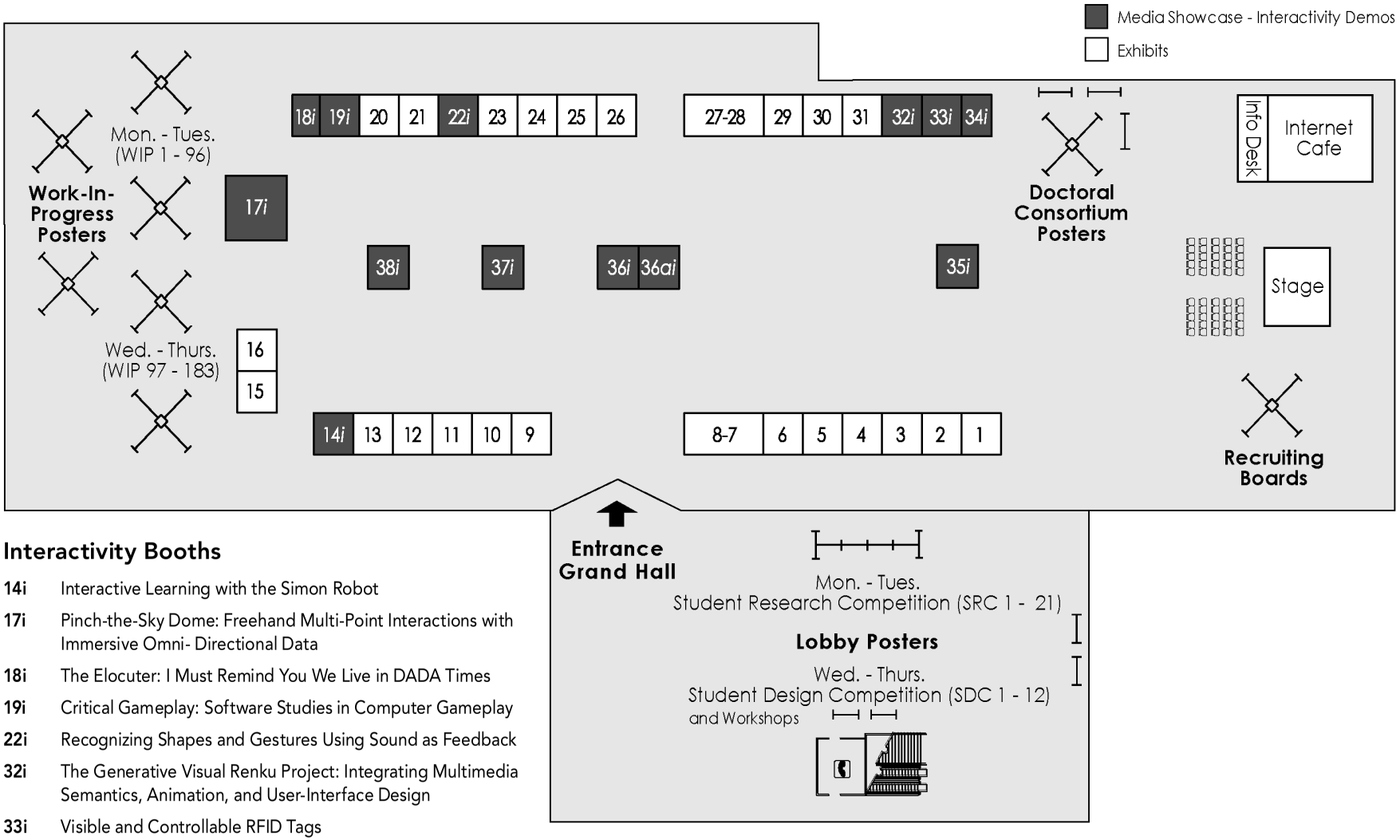


The Commons Map—Grand Hall



Interactivity Booths

14i Interactive Learning with the Simon Robot

17i Pinch-the-Sky Dome: Freehand Multi-Point Interactions with Immersive Omni- Directional Data

18i The Elocuter: I Must Remind You We Live in DADA Times

19i Critical Gameplay: Software Studies in Computer Gameplay

22i Recognizing Shapes and Gestures Using Sound as Feedback

32i The Generative Visual Renku Project: Integrating Multimedia Semantics, Animation, and User-Interface Design

33i Visible and Controllable RFID Tags

34i Robotany: Breeze

35i The EmotiChair - An Interactive Crossmodal Tactile Music Exhibit

36i Exploring Interfaces to Species Identification

36ai Augmented Reality Games

37i Shape-Changing Mobiles: Tapering in Two-Dimensional Deformational Displays
Weight-Shifting Mobiles: Automatic Balancing in Mobile Phones
Weight-Shifting Mobiles: Two-Dimensional Gravitational Displays in Mobile Phones

38i iFeel_IM: Innovative Real-Time Communication System with Rich Emotional and Haptic Channels

Hanover A Layered Surveillance - A Collaborative Interactive Art Installation

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