UbiComp 2003

The Fifth International Conference on Ubiquitous Computing

Conference Program

Welcome from the Chair

Welcome to UbiComp 2003, the Fifth International Conference on Ubiquitous Computing, offering you the opportunity to see, hear about and experience the latest developments in ubiquitous computing. The conference brings together leading researchers from a variety of disciplines exploring the next wave of computing, as it moves beyond the desktop and becomes increasingly interwoven into the fabrics of our lives.

The conference includes an inspiring keynote by William Mitchell, a provocative panel on "Mobile Play: Blogging, Tagging, and Messaging" and a collection of high quality papers and technical notes. A special 4-hour reception on Monday evening will feature a large and diverse collection of Demonstrations, Interactive Posters, Videos and Exhibits, offering you many opportunities to directly experience ubiquitous computing for yourself. A Town Meeting on Tuesday afternoon is open to all attendees, providing a forum in which to discuss the future of the conference and the field. The Conference Banquet, at the Pacific Science Center on Tuesday evening, will give us all an opportunity to enjoy food, drink and conversation, as well as experience additional hands-on exhibits, in a fun and relaxing setting away from the conference venue.

The UbiComp 2003 technical area chairs, committees and reviewers have done an outstanding job of selecting and assembling a collection of content that reflects the richness of this research area. The rest of the conference committee has also done a tremendous job in providing all the logistical support to make this content available to those of here attending the conference. I am truly honored by – and grateful for – the opportunity to work with such fabulous team!

Of course, there would be nothing to see at the conference if it weren't for all the authors who took the time to submit their work for review in the various participation categories. I want to thank all of the authors for choosing this conference as the venue in which to publish their work!

I also want to express my gratitude for the financial support provided by our Corporate Benefactor (Intel) and Sponsors (FXPAL, HP Labs, IBM Research, Microsoft Research, Nokia Research, Smart Technologies), and to all the organizations that have provided direct or indirect support for the people and activities that have been involved in the conference.

Finally, I wish to thank all the people attending the conference, as it is the opportunities to meet and interact with all of you interesting people that makes the planning of this event such a worthwhile endeavor for us all!

Joe McCarthy

Contents

Benefactor

Sponsors

Conference at a Glance	2
Workshops	3
Technical Program	5
Demonstrations	11
Interactive Posters	15
Doctoral Colloquium	19
Videos	20
Special Events	21
Conference Information	22
About the Area	26
Committees	32

Conference at a Glance

	Sunday	Monday	Tuesday	Wednesday
09:00	**WORKSHOPS & DOCTORAL COLLOQUIUM**	**OPENING PLENARY** Me++: The Cyborg Self and the Networked City *William J. Mitchell*	**PAPER SESSION** Modeling and Inference	**PANEL** Mobile Play: Blogging, Tagging, and Messaging
10:30		Coffee Break	Coffee Break	Coffee Break
11:00		**PAPER SESSION** Location and Space	**PAPER SESSION** Context Awareness	**PAPER SESSION** Domestic Environments and Healthcare
12:30		Lunch	Lunch	Lunch
14:30		**1-MINUTE MADNESS** Whirlwind Preview of Posters and Demonstrations	**PAPER SESSION** New Devices and Technologies	**PAPER SESSION** Social Aspects and Privacy
16:00		Coffee Break	Coffee Break	Coffee Break
16:30		**DEMONSTRATIONS & POSTERS RECEPTION**	**TOWN MEETING**	**PAPER SESSION** New Interfaces
18:00				
19:00			**CONFERENCE BANQUET** Pacific Science Center	
20:30				
22:00				

Workshops

Sunday, October 12th
09:00 – 18:00

Please note that attendance at and participation in UbiComp 2003 workshops is by invitation only, usually based on the acceptance of position papers submitted to the workshop organizers well in advance of the conference. Workshop participants must register for the workshops in which they are participating.

W1. **Ubicomp Education: Current Status and Future Directions** (Whidbey)
Gregory D. Abowd *(Georgia Institute of Technology, USA)*,
Gaetano Borriello *(University of Washington, USA)*,
Gerd Kortuem *(Lancaster University, UK)*

W2. **2003 Workshop on Location-Aware Computing** (Cascade 2)
Mike Hazas *(Lancaster University, UK)*,
James Scott *(Intel Research Cambridge, UK)*,
John Krumm *(Microsoft Research, Redmond, USA)*

W3. **UbiHealth 2003: The 2nd International Workshop on Ubiquitous Computing for Pervasive Healthcare Applications** (Cascade 1A)
Jakob Bardram *(University of Aarhus, Danmark)*,
Ilkka Korhonen *(VTT Information Technology, Finland)*,
Alex Mihailidis *(Simon Fraser University, Canada)*,
Dadong Wan (*Accenture Technology Labs, USA*)

W4. **2nd Workshop on Security in Ubiquitous Computing** (Vashon 1)
Joachim Posegga *(SAP Corporate Research, Germany)*,
Philip Robinson *(TecO/University of Karlsruhe, Germany)*,
Narendar Shankar *(University of Maryland, USA)*,
Harald Vogt *(ETH Zürich, Switzerland)*

W5. **Multi-Device Interfaces for Ubiquitous Peripheral Interaction** (Orcas)
Loren Terveen *(University of Minnesota, USA)*,
Charles Isbell *(Georgia Institute of Technology, USA)*,
Brian Amento *(AT&T Labs, USA)*

W6. **Ubicomp Communities: Privacy as Boundary Negotiation** (Cascade 1B)
John Canny *(University of California, Berkeley, USA)*,
Paul Dourish *(University of California, Irvine, USA)*,
Jens Grossklags *(University of California, Berkeley, USA)*,
Xiaodong Jiang *(University of California, Berkeley, USA),*
Scott Mainwaring *(Intel Research, USA)*

W7. **At the Crossroads: The Interaction of HCI and Systems Issues in UbiComp** (Cascade 1C)
Brad Johanson *(Stanford University, USA)*,
Jan Borchers *(ETH Zürich, Switzerland)*,
Bernt Schiele *(ETH Zürich, Switzerland)*,
Peter Tandler *(IPSI Darmstadt, Germany)*,
Keith Edwards *(Palo Alto Research Center, USA)*

W8. **System Support for Ubiquitous Computing — UbiSys** (St. Helens)
Roy Campbell *(University of Illinois, USA)*,
Armando Fox *(Stanford University, USA)*,
Paul Chou *(IBM T.J. Watson Research Center, USA)*,
Manuel Roman *(DoCoMo Labs, USA)*,
Christian Becker *(University of Stuttgart, Germany)*,
Adrian Friday *(Lancaster University, UK)*

W9. **Ubiquitous Systems to Support Social Interaction and Face-to-Face Communication in Public Spaces** (Olympic)
Rick Borovoy *(nTAG, LLC)*,
Harry Brignull *(The Interact Lab, COGS, University of Sussex, UK)*,
Donna Cox *(National Center for Supercomputing Applications, UIUC, USA)*,
Shahram Izadi *(The Mixed Reality Lab, University of Nottingham, UK)*,
Volodymyr Kindratenko *(National Center for Supercomputing Applications, UIUC, USA)*,
Alex Lightman *(Charmed Technology, USA)*,
David Pointer *(National Center for Supercomputing Applications, UIUC, USA)*,
Norbert Streitz *(Fraunhofer IPSI, Germany)*

W10. **Intimate (Ubiquitous) Computing** (Blakely)
Genevieve Bell *(Intel Research, USA)*,
Tim Brooke *(Intel Research, USA)*,
Elizabeth Churchill *(FX Palo Alto Lab, USA)*,
Eric Paulos *(Intel Research Berkeley, USA)*

W11. **Ubiquitous Commerce** (Adams)
George Roussos *(University of London, UK)*,
Anatole Gershman *(Accenture Technology Labs, USA)*,
Panos Kourouthanassis *(Athens University, Greece)*

W12. **AIMS 2003: Artifical Intelligence in Mobile Systems** (Vashon 2)
Antonio Krüger *(Saarland University, Germany)*,
Rainer Malaka *(Europian Media Lab, Germany)*

Doctoral Colloquium

Sunday, October 12th
09:00 – 18:00

Opening Plenary: Me++: The Cyborg Self and the Networked City

Monday, October 13th
09:00 – 10:30
Grand Ballroom I

William J. Mitchell
Professor of Architecture and Media Arts and Sciences, Head of Media Arts and Sciences, and Dean of the School of Architecture and Planning at MIT

Abstract
With Me++ the author of City of Bits and e-topia completes an informal trilogy examining the ramifications of information technology in everyday life. William Mitchell describes the transformation of wireless technology in the hundred years since Marconi—the scaling up of networks and the scaling down of the apparatus for transmission and reception. It is, he says, as if "Brobdingnag had been rebooted as Lilliput"; Marconi's massive mechanism of tower and kerosene engine has been replaced by a palm-size cellphone. If the operators of Marconi's invention can be seen as human appendages to an immobile machine, today's hand-held devices can be seen as extensions of the human body. This transformation has, in turn, changed our relationship with our surroundings and with each other. The cellphone calls from the collapsing World Trade Center towers and the hijacked jets on September 11 were testimony to the intensity of this new state of continuous electronic engagement.

Thus, Mitchell proposes, the "trial separation" of bits (the elementary unit of information) and atoms (the elementary unit of matter) is over. With increasing frequency, events in physical space reflect events in cyberspace, and vice versa; digital information can, for example, direct the movement of an aircraft or a robot arm. In Me++ Mitchell examines the effects of wireless linkage, global interconnection, miniaturization, and portability on our bodies, our clothing, our architecture, our cities, and our uses of space and time. He argues that a world governed less and less by boundaries and more and more by connections requires us to reimagine and reconstruct our environment and to reconsider the ethical foundations of design, engineering, and planning practice.

Biography
William J. Mitchell is professor of architecture and media arts and sciences, head of the Media Arts and Sciences Program, and dean of the School of Architecture and Planning at MIT. His current research focuses on the relationship of new computer and communications technology to the forms and patterns of use of architectural and urban space. His books include City of Bits, E-topia, and the forthcoming Me++: The Cyborg Self and the Networked City (all from the MIT Press).

Paper Session 1: Location and Space

Monday, October 13th
11:00 – 12:30
Grand Ballroom I
Session Chair: George Coulouris
Cambridge University (UK)

- **Building World Models by Ray-tracing Within Ceiling-Mounted Positioning Systems** (FULL PAPER)
  Robert K. Harle and Andy Hopper
  Laboratory for Communication Engineering, University of Cambridge (UK)
- **On a Location Model for Fine-Grained Geocast** (FULL PAPER)
  Frank Dürr and Kurt Rothermel
  Institute of Parallel and Distributed Systems, University of Stuttgart (Germany)
- **RightSPOT: A Novel Sense of Location for a Smart Personal Object** (TECHNOTE)
  John Krumm, Gerry Cermak, and Eric Horvitz
  Microsoft Research (USA)
- **User-Friendly Surveying Techniques for Location-Aware Systems** (TECHNOTE)
  James Scott[1] and Mike Hazas[2]
  [1] Intel Research Cambridge (UK), [2] Lancaster University (UK)

1-Minute Madness

Monday, October 13th
14:30 – 16:00
Grand Ballroom I

Demonstrations, Posters and Videos Reception

Monday, October 13th
16:30 – 20:30
Grand Ballroom II, Fifth Avenue Room, Grand Foyer

Paper Session 2: Modeling and Inference

Tuesday, October 14th
09:00 – 10:30
Grand Ballroom I
Session Chair: Antonio Krüger
Saarland University (Germany)

- **Sto(ry)chastics: a Bayesian Network Architecture for User Modeling and Computational Storytelling for Interactive Spaces** (FULL PAPER)
  Flavia Sparacino
  MIT Media Lab (USA)
- **Inferring High-Level Behavior from Low-Level Sensors** (FULL PAPER)
  Donald J. Patterson, Lin Liao, Dieter Fox, and Henry Kautz
  Department of Computer Science and Engineering, University Of Washington (USA)
- **Activity Zones for Context-Aware Computing** (FULL PAPER)
  Kimberle Koile[1], Konrad Tollmar[2], David Demirdjian[2], Howard Shrobe[1], and Trevor Darrell[2]
  [1] Agent-Based Intelligent Reactive Environments Group, [2] Visual Interface Group, MIT Computer Science and Artificial Intelligence Laboratory (USA)

Paper Session 3: Context Awareness

Tuesday, October 14th
11:00 – 12:30
Grand Ballroom I
Session Chair: Gregory Abowd
Georgia Institute of Technology (USA)

- **Context-Aware User Authentication - Supporting Proximity-Based Login in Pervasive Computing** (FULL PAPER)
  Jakob E. Bardram, Rasmus E. Kjær, and Michael Ø. Pedersen
  Centre for Pervasive Computing, Department of Computer Science, University of Aarhus (Denmark)
- **Secure Spontaneous Device Association** (TECHNOTE)
  Tim Kindberg and Kan Zhang
  Hewlett-Packard Laboratories (USA)
- **AwareCon: Situation Aware Context Communication** (TECHNOTE)
  Michael Beigl, Albert Krohn, Tobias Zimmer, Christian Decker, and Philip Robinson
  TecO, University of Karlsruhe (Germany)
- **liquid: Context-Aware Distributed Queries** (TECHNOTE)
  Jeffrey Heer, Alan Newberger, Chris Beckmann, and Jason I. Hong
  Group for User Interface Research, Computer Science Division, University of California, Berkeley (USA)
- **Is Context-Aware Computing Taking Control Away from the User? Three Levels of Interactivity Examined** (TECHNOTE)
  Louise Barkhuus[1] and Anind Dey[2]
  [1] The IT University of Copenhagen (Denmark), [2] Intel Research Berkeley (USA)

Paper Session 4: New Devices and Technologies

Tuesday, October 14th
14:30 – 16:00
Grand Ballroom I
Session Chair: Roy Want
Intel Research

- **Tools for Studying Behavior and Technology in Natural Settings** (FULL PAPER)
  Stephen S. Intille, Emmanuel Munguia Tapia, John Rondoni, Jennifer Beaudin, Chuck Kukla, Sitij Agarwal, Ling Bao, and Kent Larson
  Massachusetts Institute of Technology (USA)
- **Very Low-Cost Sensing and Communication Using Bidirectional LEDs** (FULL PAPER)
  Paul Dietz, William Yerazunis, and Darren Leigh
  Mitsubishi Electric Research Laboratories (USA)
- **SPECs: Another Approach to Human Context and Activity Sensing Research, Using Tiny Peer-to-Peer Wireless Computers** (TECHNOTE)
  Mik Lamming[1] and Denis Bohm[2]
  [1] HP Labs (USA), [2] Firefly Design (USA)
- **A 2-way Laser-assisted Selection Scheme for Handhelds in a Physical Environment** (TECHNOTE)
  Shwetak N. Patel and Gregory D. Abowd
  College of Computing & GVU Center, Georgia Institute of Technology (USA)

Town Meeting

Tuesday, October 14th
16:30 – 18:00
Grand Ballroom I

Conference Banquet

Tuesday, October 14th
19:00 – 22:00
Pacific Science Center

Panel: Mobile Play: Blogging, Tagging, and Messaging

Wednesday, October 15th
09:00 – 10:30
Grand Ballroom I

Moderator: Eric Paulos *(Intel Research, Berkeley, USA)*

Panelists: Barry Brown *(University of Glasgow, UK)*
Bill Gaver *(Royal College of Art, UK)*
Marc Smith *(Microsoft Research, USA)*
Nina Wakeford *(University of Surrey, UK)*

Ubiquitous computing, by its very definition, aspires to weave computing technologies across the fabric of our everyday lives. Many of the successes and failures encountered during the pursuit of ubiquitous computing will be dictated by the manifest integration of play. It is play that helps us cope with the past, understand the present, and prepare for the future. This panel of experts is passionately interested in engaging in a critical dialogue around the applicability, adoption, and consequences of such elements of play in ubiquitous computing research. As motivation, several tremendously popular ubiquitous computing themes with playful elements will be examined: blogging, tagging, and message play.

Paper Session 5: Domestic Environments and Healthcare

Wednesday, October 15th
11:00 – 12:45
Grand Ballroom I

Session Chair: Hans-Werner Gellersen
Lancaster University (UK)

- **Finding a Place for UbiComp in the Home** (FULL PAPER)
  Andy Crabtree, Tom Rodden, Terry Hemmings, and Steve Benford
  The School of Computer Science & IT, Jubilee Campus, University of Nottingham (UK)
- **New Perspectives on Ubiquitous Computing from Ethnographic Study of Elders with Cognitive Decline** (FULL PAPER)
  Margaret Morris, Jay Lundell, Eric Dishman, and Brad Needham
  Proactive Health, Intel Research (USA)
- **Practical Considerations of Context for Context Based Systems: An Example from an Ethnographic Case Study of a Man Diagnosed with Early Onset Alzheimer's Disease** (FULL PAPER)
  Tony Salvador and Ken Anderson
  Intel Corporation (USA)
- **"Playing with the Bits": User-configuration of Ubiquitous Domestic Environments** (TECHNOTE)
  Jan Humble[1], Andy Crabtree[2], Terry Hemmings[2], Karl-Petter Åkesson[1], Boriana Koleva[2], Tom Rodden[2], and Pär Hansson[1]
  [1] SICS, Swedish Institute of Computer Science (Sweden), [2] MRL Lab, Jubilee Campus, University of Nottingham (UK)

Paper Session 6: Social Aspects and Privacy

Wednesday, October 15th
14:30 – 16:00
Grand Ballroom I
Session Chair: Paul Dourish
University of California, Irvine (USA)

- **IntelliBadge™: Towards Providing Location-Aware Value-Added Services at Academic Conferences** (FULL PAPER)
  Donna Cox, Volodymyr Kindratenko, and David Pointer
  National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign (USA)
- **UbiTable: Impromptu Face-to-Face Collaboration on Horizontal Interactive Surfaces** (TECHNOTE)
  Chia Shen, Katherine Everitt, and Kathleen Ryall
  Mitsubishi Electric Research Labs (USA)
- **Social Network Computing** (TECHNOTE)
  Nathan Eagle and Alex (Sandy) Pentland
  MIT Media Lab (USA)
- **The Design of a Context-Aware Home Media Space for Balancing Privacy and Awareness** (FULL PAPER)
  Carman Neustaedter and Saul Greenberg
  Department of Computer Science, University of Calgary (Canada)

Paper Session 7: New Interfaces

Wednesday, October 15th
16:30 – 18:00
Grand Ballroom I
Session Chair: Bernt Schiele
ETH Zürich (Switzerland)

- **Context-Aware Computing with Sound** (FULL PAPER)
  Anil Madhavapeddy[1], David Scott[2], and Richard Sharp[3]
  [1] Computer Laboratory, University of Cambridge (UK), [2] Laboratory for Communication Engineering, University of Cambridge (UK), [3] Intel Research, Cambridge (UK)
- **An Architecture and Framework for Steerable Interface Systems** (FULL PAPER)
  Anthony Levas, Claudio Pinhanez, Gopal Pingali, Rick Kjeldsen, Mark Podlaseck, and Noi Sukaviriya
  IBM T.J. Watson Research Center (USA)
- **Evaluation of Visual Notification Cues for Ubiquitous Computing** (FULL PAPER)
  Peter Tarasewich[1], Christopher S. Campbell[2], Tian Xia[1], and Myra Dideles[1]
  [1] College of Computer and Information Science, Northeastern University (USA), [2] IBM Almaden Research Center (USA)

Monday, October 13th
16:30 – 20:30
Grand Ballroom II, Fifth Avenue Room, Grand Foyer

Some Demonstrations will run throughout the conference, and/or be available again during Lunch and Coffee Breaks on Tuesday and Wednesday

D1. Context Nuggets: A Smart-Its Game
Michael Beigl[1], Albert Krohn[1], Christian Decker[1], Philip Robinson[1], Tobias Zimmer[1], Hans Gellersen[2], Albrecht Schmidt[3]
[1]TecO, University Karlsruhe (Germany), [2]Lancaster University (UK), [3]Universität München (Germany)

D2. Eos Pods: Wireless Devices for Interactive Musical Performance
David Bianciardi[1], Tom Igoe[2] and Eric Singer[3]
[1]Audio, Video, & Controls (USA), [2]Interactive Telecommunications Program (USA), [3]LEMUR (USA)

D3. Wishing Well Demonstration
Tim Brooke and Margaret Morris
Intel Corporation (USA)

D4. Extended Sensor Mote Interfaces for Ubiquitous Computing
Waylon Brunette[1], Adam Rea[1], and Gaetano Borriello[1,2]
[1]Dept. of Computer Science and Engineering, Univ.of Washington (USA), [2]Intel Research Seattle (USA)

D5. Palimpsests on Public View: Annotating Community Content with Personal Devices
Scott Carter, Elizabeth Churchill, Laurent Denoue, Jonathan Helfman, Paul Murphy, Les Nelson
FX Palo Alto Laboratory (USA)

D6. Platypus Amoeba
Ariel Churi and Vivian Lin
Interactive Telecommunications Program, New York University (USA)

D7. M-Views: A System for Location-Based Storytelling
David Crow, Pengkai Pan, Lilly Kam and Glorianna Davenport
Media Laboratory, Massachusetts Institute of Technology (USA)

D8. Stanford Interactive Workspaces Project
Armando Fox and Terry Winograd
Computer Science Department, Stanford University (USA)

D9. Picture of Health: Photography Use in Diabetes Self-Care
Jeana Frost[1] and Brian K Smith[2]
[1]The Media Laboratory, MIT (USA), [2]School of Information Sciences and Technology, College of Education, The Pennsylvania State University (USA)

D10. Noderunner
Yury Gitman and Carlos J. Gomez de Llarena

D11. UCSD ActiveCampus – Mobile Wireless Technology for Community-Centered Ubiquitous Computing
William G. Griswold[1], Neil G. Alldrin[1], Robert Boyer[1], Steven W. Brown[1], Timothy J. Foley[1], Charles P. Lucas[1], Neil J. McCurdy[1] and R. Benjamin Shapiro[2]
[1]Department of Computer Science and Engineering, University of California San Diego (USA), [2]Department of Learning Sciences, Northwestern University (USA)

D12. The Location Stack: Multi-sensor Fusion in Action
Jeffrey Hightower and Gaetano Borriello
Dep't of Computer Science and Engineering, Univ. of Washington (USA) and *Intel Research Seattle (USA)*

D13. A Novel Interaction Style for Handheld Devices
James Hudson and Alan Parkes
Computing Department, Lancaster University (UK)

D14. WiFisense™: The Wearable Wireless Network Detector
Milena Iossifova and Ahmi Wolf
Interactive Telecommunications Program, New York University (USA)

D15. Tejp: Ubiquitous Computing as Expressive Means of Personalising Public Space
Margot Jacobs[1], Lalya Gaye[2], Lars Erik Holmquist[2]
[1]Play Studio, Interactive Institute (Sweden), [2]Future Applications Lab, Viktoria Institute (Sweden)

D16. Telemurals: Catalytic Connections for Remote Spaces
Karrie Karahalios and Judith Donath
MIT Media Lab (USA)

D17. Fluidtime: Developing a Ubiquitous Time Information System
Michael Kieslinger
Interaction Design Institute Ivrea (Italy)

D18. Pulp Computing
Tim Kindberg, Rakhi Rajani, Mirjana Spasojevic, and Ella Tallyn
Mobile and Media Systems Lab, Hewlett-Packard Labs (USA)

D19. Living Sculpture
Yves Amu Klein and Michael Hudson
Lorax Works (USA)

D20. Place Lab's First Step: A Location-Enhanced Conference Guide
Anthony LaMarca[1], David McDonald[3], Bill N. Schilit[1], William G. Griswold[4], Gaetano Borriello[1,2], Eithon Cadag[3], and Jason Tabert[3]
[1]Intel Research Seattle (USA), [2]Dept. of Computer Science and Engineering, University of Washington (USA), [3]Information School, University of Washington (USA), [4]Dept. of Computer Science and Engineering, UC San Diego (USA)

D21. AuraLamp: Contextual Speech Recognition in an Eye Contact Sensing Light Appliance
Aadil Mamuji, Roel Vertegaal, Jeffrey S. Shell, Thanh Pham and Changuk Sohn
Human Media Lab, Queen's University (Canada)

D22. The Ubiquitous Computing Resource Page
Joseph F. McCarthy[1], J.R. Jenkins[2] and David G. Hendry[2]
[1]Intel Research Seattle (USA), [2]Information School, University of Washington (USA)

D23. The Proactive Displays & The Experience UbiComp Project
Joseph F. McCarthy, David H. Nguyen, Al Mamunur Rashid, and Suzanne Soroczak
Intel Research Seattle (USA)

D24. Networking Pets and People
Dan Mikesell
Interactive Telecommunications Program, New York University (USA)

D25. Responsive Doors
Greg Niemeyer
University of California Berkeley (USA)

D26. Squeeze Me: A Portable Biofeedback Device for Children
Amy Parness, Ed Guttman and Christine Brumback
Interactive Telecommunications Program, New York University (USA)

D27. The Personal Server: Personal Content for Situated Displays
Trevor Pering, John Light, Murali Sundar, Gillian Hayes, Vijay Raghunathan, Eric Pattison, and Roy Want
Intel Research (USA)

D28. Ambient Wood: Demonstration of a Digitally Enhanced Field Trip for Schoolchildren
Cliff Randell[1], Ted Phelps[2], and Yvonne Rogers[2]
[1]Department of Computer Science, University of Bristol (UK), [2]School of Cognitive and Computer Science, University of Sussex (UK)

D29. Wall_Fold: The Space Between 0 and 1
Ruth Ron
archi-TECH-ture (UK)

D30. Digital Poetry Modules
James G. Robinson
Interactive Telecommunications Program, New York University (USA)

D31. The Verse-O-Matic
James G. Robinson
Interactive Telecommunications Program New York University (USA)

D32. AURA: A Mobile Platform for Object and Location Annotation
Marc Smith, Duncan Davenport, and Howard Hwa
Microsoft Research (USA)

D33. Anatomy of a Museum Interactive: "Exploring Picasso's 'La Vie' "
Leonard Steinbach and Holly R. Witchey
Cleveland Museum of Art (USA)

D34. Facilitating Argument in Physical Space
Mark Stringer, Jennifer A. Rhode, Alan F. Blackwell and Eleanor F. Toye
Computer Laboratory, University of Cambridge (UK)

D35. Box: Open System to Design Your Own Network
Victor Vina
Interaction Design Institute Ivrea (Italy)

D36. Demonstrations of Expressive Softwear and Ambient Media
Sha Xin Wei[1], Yoichiro Serita[2], Jill Fantauzza[1], Steven Dow[2], Giovanni Iachello[2], Vincent Fiano[2], Joey Berzowska[3], Yvonne Caravia[1], Delphine Nain[2], Wolfgang Reitberger[1], and Julien Fistre[4]
[2]School of Literature, Communication and Culture/GVU Center, Georgia Institute of Technology (USA), *[2]College of Computing/GVU Center, Georgia Institute of Technology (USA)*, *[3]Faculty of Fine Arts, Concordia University (Canada)*

D37. Mobile Capture and Access for Assessing Language and Social Development in Children with Autism

David Randall White [1], José Antonio Camacho-Guerrero[2], Khai N. Truong[1], Gregory D. Abowd[1], Michael J. Morrier[3], Pooja C. Vekaria[3], and Diana Gromala[1]
[1]GVU Center, Georgia Institute of Technology (USA), [2]Instituto de Ciencias Matematicas e de Computacao, Universidade de Sao Paulo (Brazil), [3]Emory Autism Center, Emory University School of Medicine (USA)

D38. The Narrator: A Daily Activity Summarizer Using Simple Sensors in an Instrumented Environment

Daniel Wilson[1] and Christopher Atkeson[1,2]
[1]Robotics Institute, Carnegie Mellon University (USA), [2]Human Computer Interaction, Carnegie Mellon University (USA)

Monday, October 13th
16:30 – 20:30
Grand Ballroom II, Fifth Avenue Room, Grand Foyer

Posters will be available for viewing Monday during the Demonstrations, Posters and Videos Reception (16:30-20:30), and throughout the rest of the conference.

Authors will be on-hand to present and discuss their work during the Monday reception and Tuesday and Wednesday coffee breaks at the following scheduled times:

- Odd-numbered posters: Monday 16:30-17:30, 18:30-19:30, Tuesday 10:30-11:00 and Wednesday 16:00-16:30
- Even-numbered posters: Monday 17:30-18:30, 19:30-20:30, Tuesday 16:00-16:30 and Wednesday 10:30-11:00

Interfaces

P1. Device-Spanning Multimodal User Interfaces
Elmar Braun and Andreas Hartl
Telecooperation Group, Darmstadt University of Technology (Germany)

P2. On the Adoption of Groupware for Large Displays: Factors for Design and Deployment
Elaine M. Huang[1], Alison Sue[2], Daniel M. Russell[2]
[1]Georgia Institute of Technology (USA), [2]IBM Almaden Research Center (USA)

P3. Super - Compact Keypad
Roman Ilinski
CRS DM (USA)

P4. EnhancedMovie: Movie Editing on an Augmented Desk
Yoko Ishii[1], Yasuto Nakanishi[1], Hideki Koike[1], Kenji Oka[2], and Yoichi Sato[2]
[1]University of Electro-Communications (Japan), [2]University of Tokyo (Japan)

P5. Instructions Immersed into the Real World - How Your Furniture Can Teach You
Florian Michahelles[1], Stavros Antifakos[1], Jani Boutellier[1], Bernt Schiele[1], and Albrecht Schmidt[2]
[1]PCCV, ETH Zurich (Switzerland), [2]University of Munich (Germany)

P6. i-wall: Personalizing a Wall as an Information Environment with a Cellular Phone Device
Yu Tanaka[1], Keita Ushida[1], Takeshi Naemura[1], Hiroshi Harashima[1], and Yoshihiro Shimada [2]
[1]The University of Tokyo (Japan), [2]NTT Cyber Space Laboratories, NTT Corporation (Japan)

Ambient Displays

P7. Healthy Cities Ambient Displays
Morgan Ames[1], Chinmayi Bettadapur[1], Anind Dey[1, 2], and Jennifer Mankoff[1]
[1]University of California, Berkeley (USA), [2]Intel Research Berkeley (USA)

P8. LaughingLily: Using a Flower as a Real World Information Display
Stavros Antifakos and Bernt Schiele
PCCV, ETH Zurich (Switzerland)

P9. Habitat: Awareness of Life Rhythms over a Distance Using Networked Furniture
Dipak Patel and Stefan Agamanolis
Media Lab Europe (Ireland)

End-User Programming of Smart Objects

P10. Smart Home in Your Pocket
Louise Barkhuus and Anna Valgårda
The IT University of Copenhagen (Denmark)

P11. SiteView: Tangibly Programming Active Environments with Predictive Visualization
Christopher Beckmann[1], Anind Dey[1,2]
[1]University of California, Berkeley (USA), [2]Intel Research Berkeley (USA)

P12. Towards Ubiquitous End-User Programming
Rob Hague, Peter Robinson, and Alan Blackwell
University of Cambridge Computer Laboratory (UK)

Interaction, Collaboration, and Information Sharing

P13. TunA: A Mobile Music Experience to Foster Local Interactions
Arianna Bassoli, Cian Cullinan, Julian Moore, and Stefan Agamanolis
Media Lab Europe (Ireland)

P14. AudioBored: a Publicly Accessible Networked Answering Machine
Jonah Brucker-Cohen and Stefan Agamanolis
Media Lab Europe (Ireland)

P15. Dimensions of Identity in Open Educational Settings
Alastair Iles, Daniel Glaser, and Matthew Kam
University of California, Berkeley (USA)

P16. Digital Message Sharing System in Public Places
Seiie Jang[1], Woontack Woo[1], and Sanggoog Lee[2]
[1]KJIST (South Korea), [2]SAIT (South Korea)

P17. The Spookies: A Computational Free Play Toy
Tobias Rydenhag[1,2], Jesper Bernson[1], Sara Backlund[1,2], and Lena Berglin[1]
[1]ToyLabs (Sweden), *[2]PLAY, Interactive Institute (Sweden)*

P18. k:info: A Smart Billboard for Informal Public Spaces
Max Van Kleek
Computer Science and Artificial Intelligence Laboratory, MIT (USA)

Context Detection and Modelling

P19. An Intelligent Broker for Context-Aware Systems
Harry Chen, Tim Finin, and Anupam Joshi
University of Maryland, Baltimore County (USA)

P20. Containment: Knowing Your Ubiquitous System's Limitations
Boris Dragovic, Jon Crowcroft
The Computer Laboratory, University of Cambridge (UK)

P21. ContextMap: Modeling Scenes of the Real World for Context-Aware Computing
Yang Li, Jason I. Hong, and James A. Landay
GUIR, CS Division, University of California, Berkeley (USA)

P22. Service Platform for Exchanging Context Information
Daisuke Morikawa, Masaru Honjo, Akira Yamaguchi, and Masayoshi Ohashi
KDDI R&D Labs Inc. (Japan)

P23. The State Predictor Method for Context Prediction
Jan Petzold, Faruk Bagci, Wolfgang Trumler, and Theo Ungerer
University of Augsburg (Germany)

P24. Collaborative Capturing of Interactions by Multiple Sensors
Yasuyuki Sumi[1], Tetsuya Matsuguchi[2], Sadanori Ito[2], Sidney Fels[3], and Kenji Mase[4]
[1]Graduate School of Informatics, Kyoto University (Japan), [2]ATR Media Information Science Laboratories (Japan), [3]University of British Columbia (Canada), [4]Nagoya University (Japan)

Sensors and Networks

P25. Ubiquity in Diversity — A Network Centric Approach
Rajiv Chakravorty, Pablo Vidales, Boris Dragovic, Calicrates Policroniades, and Leo Patanapongpibul
University of Cambridge Computer Laboratory and Engineering Department (UK)

P26. A Peer-To-Peer Approach for Resolving RFIDs
Christian Decker, Michael Leuchtner, and Michael Beigl
TecO, University of Karlsruhe (Germany)

P27. Single Base-station 3D Positioning Method using Ultrasonic Reflections
Esko Dijk[1], Kees van Berkel[1, 2], Ronald Aarts[2], Evert van Loenen[2]
[1]Eindhoven Univ. of Technology (The Netherlands), [2]Philips Research Labs Eindhoven (The Netherlands)

P28. Prototyping a Fully Distributed Indoor Positioning System for Location-aware Ubiquitous Computing Applications
Masateru Minami[1], Hiroyuki Morikawa[2], and Tomonori Aoyama[2]
[1]Shibaura Institute of Technology (Japan), [2]The University of Tokyo (Japan)

P29. Connectivity Based Equivalence Partitioning of Nodes to Conserve Energy in Mobile Ad Hoc Networks
Anand Prabhu Subramanian
Anna University (India)

P30. Self-configuring, Lightweight Sensor Networks for Ubiquitous Computing
Christopher Wren and Srinivasa Rao
Mitsubishi Electric Research Laboratories (USA)

Smart Objects: Artifacts and Architectures

P31. Grouping Mechanisms for Smart Objects Based On Implicit Interaction and Context Proximity
Stavros Antifakos[1], Bernt Schiele[1], and Lars Erik Holmquist[2]
[1]PCCV, ETH Zurich (Switzerland), [2]Viktoria Institute (Sweden)

P32. Inside/Outside: an Everyday Object for Personal Environmental Monitoring.
Katherine Moriwaki, Linda Doyle, and Margaret O'Mahoney
Trinity College Dublin (Ireland)

P33. i-Beans: An Ultra-low Power Wireless Sensor Network
Sokwoo Rhee, Deva Seetharam, Sheng Liu, Ningya Wang, and Jason Xiao
Millennial Net (USA)

P34. A Rule-based I/O Control Device for Ubiquitous Computing
Tsutomu Terada[1], Masahiko Tsukamoto[1], Tomoki Yoshihisa[1], Yasue Kishino[1], Shojiro Nishio[1], Keisuke Hayakawa[2], and Atsushi Kashitani[2]
[1]Osaka University (Japan), [2]NEC Corp.(USA)

P35. Smart Things in a Smart Home
Elena Vildjiounaite, Esko-Juhani Malm, Jouni Kaartinen, and Petteri Alahuhta
Technical Research Center of Finland (Finland)

P36. Resource Management for Particle-Computers
Tobias Zimmer, Frank Binder, Michael Beigl, Christian Decker, and Albert Krohn
TecO, University of Karlsruhe (Germany)

Applications

P37. Using a POMDP Controller to Guide Persons With Dementia Through Activities of Daily Living
Jennifer Boger[1], Geoff Fernie[1, 2], Pascal Poupart[2], and Alex Mihailidis[3]
[1]Centre for Studies in Aging (Canada), [2]University of Toronto (Canada), [3]Simon Fraser University (Canada)

P38. The Chatty Environment - A World Explorer for the Visually Impaired
Vlad Coroama
ETH Zurich (Switzerland)

P39. Support for Nomadic Science Learning
Sherry Hsi[1], Rob Semper[1], and Mirjana Spasojevic[2]
[1]The Exploratorium (USA), [2]HP Labs (USA)

P40. Development of an Augmented Ring Binder
Magnus Ingmarsson, Mikael Isaksson, and Mats Ekberg
Linköping University (Sweden)

P41. Meaningful Traces: Augmenting Children's Drawings with Digital Media
Nassim Jafarinaimi, Diane Gromala, Jay David Bolter, and David VanArsdale
Georgia Institute of Technology (USA)

P42. The Junk Mail to Spam Converter
Michael Weller, Mark D Gross, Jim Nicholls, and Ellen Yi-Luen Do
[1]Design Machine Group, Department of Architecture, University of Washington (USA)

Doctoral Colloquium

Sunday, October 12th
09:00 – 18:00

Note: not all Doctoral Colloquium papers will be presented as posters.

DC1. Communication from Machines to People with Dementia
T. D. Adlam
Bath Institute of Medical Engineering (UK)

DC2. Context Information Distribution and Management
Mark Assad
University of Sydney (Australia)

DC3. Publish/Subscribe Messaging: An Active Networking Approach
Michael Avery
University of Sydney (Australia)

DC4. Workspace Orchestration to Support Intense Collaboration in Ubiquitous Workspaces
Terence Blackburn
University of South Australia (Australia)

DC5. Visualisations of Digital Items in a Physical Environment
David Carmichael
University of Sydney (Australia)

DC6. Identity Management in Context Aware Intelligent Environments
Dan Cutting
University of Sydney (Australia)

DC7. Towards a Software Architecture for Device Management in Instrumented Environments
Christoph Endres
Saarland University (Germany)

DC8. Ubiquitous Support for Knowledge and Work
Michael A. Evans
University of Indiana (USA)

DC9. Anonymous Usage of Location-Based Services over Wireless Networks
Marco Gruteser
University of Colorado at Boulder (USA)

DC10. Service Advertisement Mechanisms for Portable Devices within an Intelligent Environment
Adam Hudson
University of Sydney (Australia)

DC11. ME: Mobile E-Personality
Pekka Jäppinen
Lappeenranta University of Technology (Finland)

DC12. User Location and Mobility for Distributed Intelligent Environment
Teddy Mantoro
Australian National University (Australia)

DC13. Towards a Rich Boundary Object Model for the Design of Mobile Knowledge Management Systems
Jia Shen
New Jersey Institute of Technology (USA)

Videos

- **DigiScope: An Invisible Worlds Window**
  Alois Ferscha and Markus Keller
  Research Institute for Pervasive Computing (Austria)
- **Bumping Objects Together as a Semantically Rich Way of Forming Connections between Ubiquitous Devices**
  Ken Hinckley
  Microsoft Research (USA)
- **Ubiquitous Computing in the Living Room, Concept Sketches and an Implementation of a Persistent User Interface**
  Stephen Intille[1], Vivienne Lee[1] and Claudio Pinhanez[2]
  [1]Massachusetts Institute of Technology (USA), [2]IBM TJ Watson Research (USA)
- **STARS — A Ubiquitous Computing Platform for Computer Augmented Tabletop Games**
  Carsten Magerkurth, Richard Stenzel, and Thorsten Prante
  Fraunhofer IPSI (Germany)
- **A-Life: Saving Lives in Avalanches**
  Florian Michahelles and Bernt Schiele
  ETH Zurich (Switzerland)
- **Breakout for Two: An example of an Exertion Interface for Sports over a Distance**
  Florian Mueller, Stefan Agamanolis and Rosalind Picard
  Media Lab Europe (Ireland)
- **Concept and Partial Prototype Video: Ubiquitous Video Communication with the Perception of Eye Contact**
  Emmanuel Munguia Tapia, Stephen Intille, John Rebula and Steve Stoddard
  Massachusetts Institute of Technology (USA)
- **The Design of a Context-Aware Home Media Space**
  Carman Neustaedter and Saul Greenberg
  GroupLab, University of Calgary (Canada)
- **Hello.Wall — Beyond Ambient Displays**
  Thorsten Prante, Carsten Röcker, Norbert Streitz, Richard Stenzel, Carsten Magerkurth, Daniel van Alphen, and Daniela Plewe
  Fraunhofer IPSI (Germany)
- **Total Recall: In-place Viewing of Captured Whiteboard Annotations**
  Johan Sanneblad and Lars Erik Holmquist
  FAL, Viktoria Institute (Sweden)
- **eyeCOOK: A Gaze and Speech Enabled Attentive Cookbook**
  Jeffrey Shell, Jeremy Bradbury, Craig Knowles, Connor Dickie and Roel Vertegaal
  Human Media Lab, Queen's University (Canada)
- **Virtual Rear Projection**
  Jay Summet, Ramswaroop Somani, James Rehg and Gregory D. Abowd
  Georgia Institute of Technology (USA)
- **Virtual Handyman: Supporting Micro Services on Tab through Situated Sensing & Web Services**
  Dadong Wan
  Accenture Technology Labs (USA)

1-Minute Madness

Monday, October 13th
14:30 – 16:00
Grand Ballroom I

Authors of Demonstrations, Posters and Videos will each take a 1-minute turn providing a brief glimpse of their work, hoping to entice you to visit them during the Monday Reception (immediately after this session) or one of the breaks. No questions will be allowed during this fast-paced, high-energy event; instead, attendees are encouraged to save their questions for individual followup with the authors later.

Demonstrations, Posters and Videos Reception

Monday, October 13th
16:30 – 20:30
Grand Ballroom II, Fifth Avenue Room, Grand Foyer

Come meet and interact with the authors of and their work during this four-hour special event. Complimentary light appetizers and a cash bar will be available to help keep your energy levels high during your exploration of this vast smorgasboard of inspirational, engaging and provocative work in ubiquitous computing.

Town Meeting

Tuesday, October 14th
16:30 – 18:00
Grand Ballroom I
Hear about plans for – and opportunities to get involved in – UbiComp 2004. Share your views about the past, present and future of UbiComp, the conference and/or the field.

Conference Banquet

Tuesday, October 14th
19:00 – 22:00
Pacific Science Center

Take a 90-second ride on the monorail from Westlake Center -- across the street from the Westin -- to the Seattle Center (your badge will be your ticket), where the Pacific Science Center is a short walk from the monorail station. After the banquet, the monorail will be available to take you back to Westlake Center up until 11:00pm. The cost of this event is included in the conference registration fee; additional banquet tickets may be purchased for US$60.

Conference Hotel

The Westin Seattle
1900 Fifth Avenue
Seattle, WA 98101
Phone: +1-206-728-1000
Fax: +1-206-728-2259
Web: http://www.westin.com/seattle

On-Site Conference Office (206-256-7690)

Conference registration is located in the Grand Registration Office (Westin Grand Ballroom Level, 4th Floor) and will be open:

Sunday 07:00 - 18:00
Monday 07:00 - 18:00
Tuesday 08:00 - 18:00
Wednesday 08:00 - 16:30

Name Badges

Please wear your conference name badge at all times. Badges are required for entrance to all functions and to ride the monorail to the Pacific Science Center.

Tickets

Tickets for the Pacific Science Center are located behind your badge. Please keep these with you as they will be required for entrance.

Message Center

A message board will be located in the Grand Ballroom II.

Internet Center

Computers are available for accessing the Internet in the Grand Ballroom II. Wireless access will be available throughout most of the Grand Ballroom Level.

Parking

Valet parking is available at the Westin Seattle for US$26/day. Additional parking is available in nearby lots. On-street parking is limited and metered.

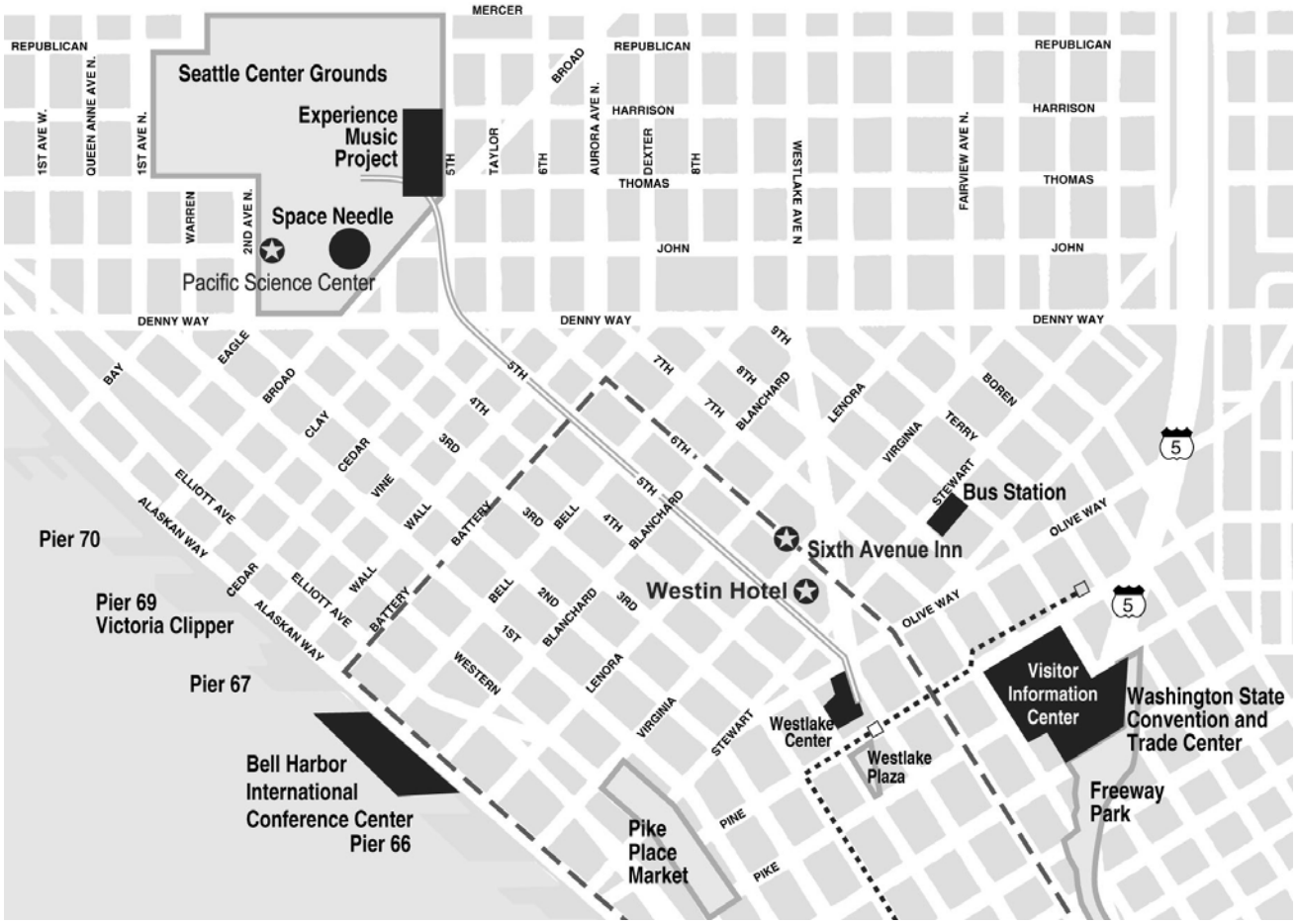
Smoking

Smoking is prohibited throughout all meeting room floors at the Westin.

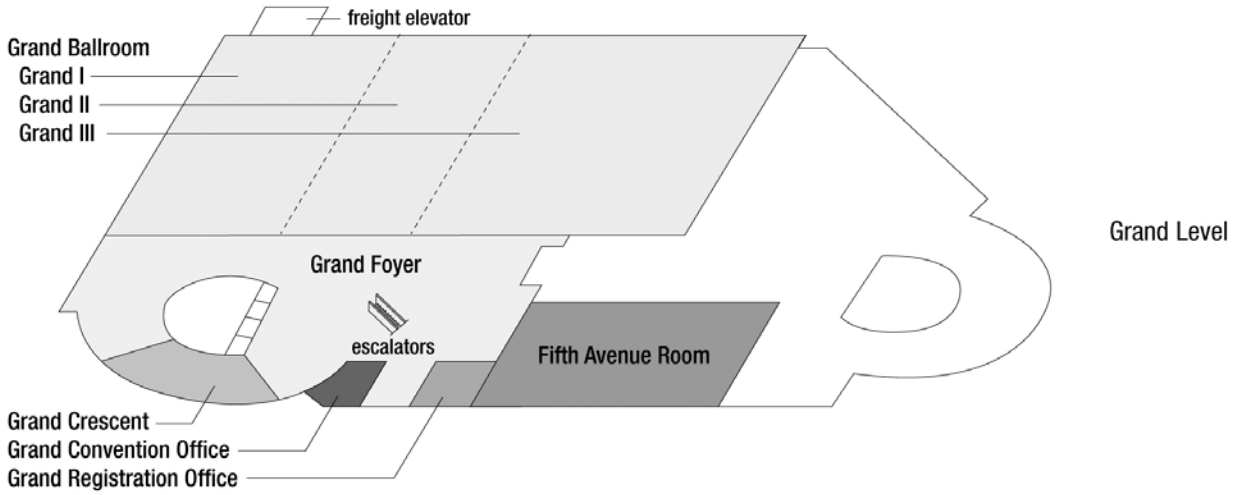
Audio/Video Recording

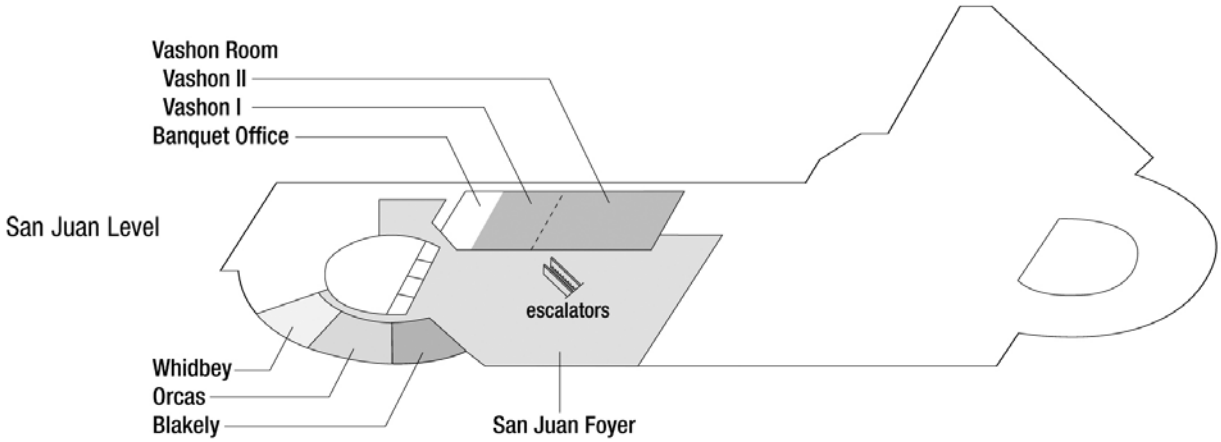
The use of audio/video recording equipment by conference attendees is prohibited, except where approved by the Conference Chair.

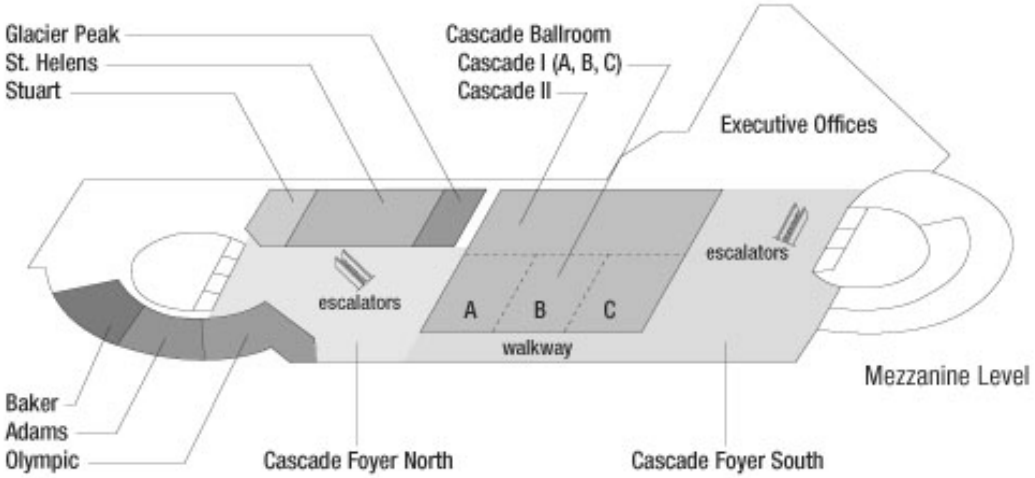
Map of Conference Venues

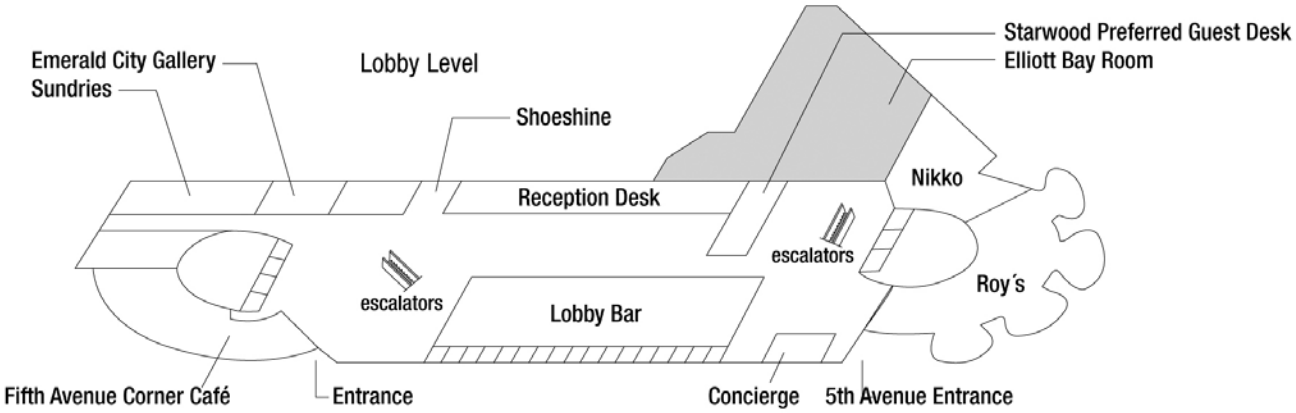


Conference Hotel Layout






Glacier Peak
St. Helens
Stuart
Cascade Ballroom
Cascade I (A, B, C)
Cascade II
Executive Offices
escalators
escalators
A
B
C
walkway
Mezzanine Level
Baker
Adams
Olympic
Cascade Foyer North
Cascade Foyer South


Emerald City Gallery
Sundries
Lobby Level
Shoeshine
Starwood Preferred Guest Desk
Elliott Bay Room
Nikko
Reception Desk
escalators
escalators
Roy´s
Lobby Bar
Fifth Avenue Corner Café
Entrance
Concierge
5th Avenue Entrance

Seattle

Seattle's steep hills, lush greenery, and abundant bays, lakes, rivers, canals, and of course Puget Sound have earned it the title "The Emerald City." On a clear day, you can see snow-capped Mount Rainier in the distance.

The city of Seattle is made welcoming by natural boundaries of hills and water that produce a variety of city neighborhoods that feel like small towns - each with their own distinct culture. Pike Place Market, walking distance from the Westin Hotel, is the oldest continuously operating farmers market in the country and a wonderful place to view or purchase fresh fruits, vegetables, flowers, and seafood. The downtown area contains a multitude of stores, including Nordstrom's flagship store. Belltown, the hippest and fastest developing part of downtown offers cutting edge nightclubs, restaurants, boutiques, and galleries. Further afield, Pioneer Square, the International District, Capitol Hill and Fremont give you a taste of Seattle's local charm.

Opportunities for hiking, biking, kayaking and other outdoor activities abound in the Seattle area. The Washington Park Arboretum and the Seattle Waterfront are wonderful places to take in the natural surroundings. The Woodland Park Zoo is a world leader in naturalistic animal displays. Longer trips might include Snoqualmie Falls, Mount Rainier, and the Cascade or Olympic mountain ranges.

Top Seattle Attractions

Seattle is big enough to keep visitors busy with weeks of explorations, and even residents who have spent years here still have not ventured into all its nooks and crannies. Whatever you do, try to see at least several of the following (see the links below): Pike Place Market (this should be number one on every list), Pioneer Square, Seattle Art Museum, Seattle Aquarium, Space Needle, Experience Music Project, Pacific Science Center, Ballard Locks, Woodland Park Zoo, Burke Museum, and the Museum of Flight. For even more fun, add in the ever-popular Underground Tour in Pioneer Square, a stroll around Green Lake or through the arboretum in Volunteer Park, or a visit to one of the city's funky and delightful neighborhoods:

- Green Lake
- Fremont
- University District
- Capitol Hill (Broadway Ave.)

Pike Place Market

Since 1907, local farmers have been offering fresh produce at the Pike Place Market. The market complex is home to several hundred businesses, ranging from fish markets to arts and crafts shops, bookstores, street musicians, and dozens of restaurants, delis, and take-outs.

The Woodland Park Zoo

Seattle boasts an award-winning zoo. Exhibits include African Village, African Wild Dogs, Bug World, Family Farm, Tropical Rain Forest, Tropical Asia Elephant Forest and Trail of Vines, Northern Trail, Sumatran Tiger Cubs, Day and Night building with snakes, reptiles and nocturnal animals, Rain Forest Food Pavilion and ZooStore; 5500 Phinney Ave. N., Seattle; adults $10; seniors 65 and older and students with ID $9.25; youths 6 to 17 and disabled $7.50; 3 to 5 $5.25; toddlers free; (206-684-4800 or www.zoo.org).

Ballard Locks

The Ballard Locks connect Puget Sound with the fresh water of Salmon Bay, Lake Washington, and Lake Union where you can watch vessels being raised and lowered. The locks also feature seven acres of botanical gardens and salmon fish ladders that can be seen from an underwater viewing window.

Burke Museum
Enjoy spectacular artifacts and amazing specimens at the region's only and major natural history museum. The Burke Museum houses many interactive events and exhibits such as a rumbling volcano, real dinosaur skeletons, and an Ice Age mastodon.

Experience Music Project
The Experience Music Project (EMP) is a one-of-a-kind music museum combining interactive and interpretive exhibits to tell the story of the creative, innovative, and rebellious expression that defines American popular music. This newly opened museum features a world-class collection of artifacts, unique architecture, state-of-the-art technology, exciting interactive presentations, and a dynamic ride-like attraction. EMP will encourage visitors of all ages and backgrounds to experience the power and joy of music in its many forms.

Museum of Flight
The Museum of Flight showcases the history of aviation technology from its inception to the present. Exhibits are housed in the Red Barn, Boeing's first manufacturing plant, and in the glassed-in Great Gallery Complex located near Boeing field.

The Pacific Science Center
Located under the arches near the Space Needle, the Pacific Science Center is a six-building complex offering hands-on science adventure. It also contains a planetarium, a three and one-half story IMAX theater, and the Spacearium featuring laser light shows.

Pioneer Square
Pioneer Square is a 30 block historic district that has sidewalk cafes, art galleries, antique shops, boutiques, nightclubs, restaurants, and parks.

Seattle Aquarium
The Seattle Aquarium, located at Pier 59 on the waterfront, features several species of birds, fish, invertebrates, and marine mammals. Highlights include the 400,000-gallon Underwater Dome with a 360 degree view of Puget Sound's aquatic life, the Pacific Coral Reef Exhibit, the Tide Pool Exhibit, sea otters, seals, and a salmon ladder and hatchery.

Seattle Art Museum
The Seattle Art Museum, located in downtown Seattle, features more than 20,000 art objects, from African, Asian, ancient Mediterranean and Egyptian collections, to old master paintings and contemporary Northwest art. The museum also houses a cafe and store.

Seattle Center
This 74-acre campus was developed in the heart of Seattle for the 1962 World's Fair. Today's Seattle Center grounds are home to the Pacific Science Center, Pacific Northwest Ballet, the Boeing IMAX Theatre, Seattle Repetory Theatre, Intiman Theatre, Children's Museum, Seattle Children's Theatre, the International Fountain and more!

The Seattle Space Needle
The Space needle, Seattle's crowning landmark, offers a 360 degree view from the observation deck which includes both an indoor and outdoor viewing deck, a gift shop, and an espresso bar. Above the observation deck is a revolving restaurant offering Northwest cuisine.

Seattle Waterfront
The Seattle Waterfront is a great place to stroll where a variety of shops, restaurants, and coffee shops can be found. Waterfront Park offers a great view of the Seattle skyline and the oceangoing vessels on Puget Sound.

Washington Park Arboretum
The Washington Park Arboretum is a 200 acre living museum of trees, shrubs, and vines featuring more than 10,000 exotic plants. The grounds also include a 3.5-acre Japanese Garden that features azaleas, Japanese maples, rhododendrons, camellias, evergreens, mosses, ferns, a pond, and a teahouse.

Washington State Ferries
The Washington State Ferries are the State's number one tourist attraction and the second largest mass transit system in the state of Washington. Sparkling waters, snow-capped mountains, cityscapes, salt air, leaping Orca whales, the call of the gulls - a journey aboard a Washington State Ferry appeals to the senses.

CITYPASS - Six of Seattle's most popular attractions - the Space Needle, Pacific Science Center, Seattle Aquarium, the Museum of Flight, Argosy harbor cruise, and Woodland Park Zoo - have gotten together to offer a half-price CityPass that provides entrance to all of these for $42.00 adults, and $29.00 youths (ages 4-13). Passes are valid for nine days, and can be purchased at any of the six attractions. This is an excellent deal for travelers, and beats waiting in lines for tickets at each venue. (http://citypass.net)

Weather
October temperatures in Seattle are generally mild. The average daytime high temperature in October is 60°F (16°C) and the average nighttime low temperature is 45°F (7°C).

Getting Around
Metro Bus fares are $1.25 off-peak, and $1.50 at peak hour, two-zone off-peak is $1.25, and two-zone peak is $2.00, reduced fare (senior, etc) is $0.25. (http://transit.metrokc.gov)

Washington State Ferries cross Puget Sound to various destinations. Further information about Ferries can be obtained by calling (206) 464-6400. (http://www.wsdot.wa.gov/ferries)

The monorail connects Seattle center to Westlake Center (across from the Westin Hotel). The Monorail leaves at 15 minute intervals from 9am to 11pm.

Sea-Tac Airport Transportation Information
The Sea-Tac International Airport (http://portseattle.org/seatac/) is located approximately 20 minutes south of downtown Seattle. The airport services both domestic and international flights. The information below is suggested for transportation between the airport and downtown Seattle.

GrayLine Airport Express Service - The Gray Line Airport Express (http://graylineofseattle.com/airport.cfm) provides frequent shuttle service to downtown Seattle hotels between 6:00 a.m. and 11:45 p.m. The cost is $8.50 per person one-way, and $14 roundtrip. Advance reservations are not necessary. Tickets may be purchased from the service desks located on the baggage claim level of the airport.
Telephone number: +1-206-626-6088 or +1-800-426-7532 (toll free)

Shuttle Express - Frequent operation between the airport and any Seattle destination you request. For more information, please check their website: http://shuttleexpress.com

Taxi Services

- Yellow Cabs
  Telephone: +1-206-622-6500 Reservations
  Sea-Tac Airport to downtown Seattle $32-34 (estimate)

- Farwest Taxi
  Telephone: +1-206-622-1717 Reservations
  Sea-Tac Airport to downtown Seattle $27-30 (estimate)

Places to Eat

1. 5th Avenue Corner Café	(206) 728-1000	1900 Fifth Avenue
2. Andaluca Olive & 4th		
3. Assaggio Ristorante	(206) 441-1399	2010 4th Ave
4. Bottega Italiana	(206) 343-0200	1425 First Avenue
5. Brasserie Margaux	(206) 777-1990	401 Lenora St
6. Bruno's Mexican Cucina		1417 3rd Ave.
7. Dahlia Bakery	(206) 682-4142	2001 4th Ave.
8. Dahlia Lounge	(206) 682-4142	2001 4th Ave.
9. Desert Fire Restaurant	(206) 405-3400	600 Pine St.
10. Gee Whiz Coffe Shop	(206) 441-0511	1925 5th Ave
11. Gelatiamo		1400 3rd Ave.
12. Gordon Biersch		600 Pine St.
13. icon Grill	(206) 441-6330	1933 5th Ave
14. Il Fornaio Italian Restaurant		6th & Olive Way
15. Isabella Ristorante	(206) 441-8281	1909 3rd Ave.
16. Le Panier Very French Bakery	(206) 441-3669	1902 Pike Place
17. Mamasita's		3rd & Stewart
18. Monorail Espresso	(206) 625-0449	510 Pike St.
19. Nara Grill		2027 5th Ave
20. Nikko Restaurant		1900 5th Ave
21. Palace Kitchen		2030 5th Ave.
22. Pete's Diner		8th & Stewart
23. Pike Place Bar & Grill	(206) 624-1365	1509 1st Ave.
24. Pike Pub & Brewery	(206) 622-6044	1415 1st Ave.
25. Pike Street Café	(206) 447-1987	600 Pike St
26. Ralph's Grocery & Deli	(206) 441-0700	2035 4th Ave
27. Roxy's Diner		1329 1st Ave.
28. Roy's	(206) 256-7697	1900 Fifth Ave.
29. Seattle's Best Coffee	(206) 624-1635	400 Pike Street
30. Starbucks		600 6th Ave
31. Starbucks		1524 7th Ave
32. Starbucks Kiosk	(206) 405-4190	400 Pine St
33. Steve & Jerry's Hot Dogs		
34. Subway		1414 3rd Ave.
35. Taqueria Tropical		600 6th Ave
36. The Islander		
37. The Oceanaire	(206) 267-2277	7th & Olive Way
38. Toi		1904 4th Ave.
39. Tully's		1st & Union
40. Tully's at Westlake Center	(206) 405-3797	1601 5th Ave.
41. Von's Grand City Cafe	(206) 621-8667	619 Pine St
42. Walgreen's		3rd & Pike
43. Water Fountain		400 Pine St.
44. Wolfgang Puck Cafe		1225 1st Ave.
45. Yakima Grill		612 Stewart St.
46. Zaina		1619 3rd Ave.

Organizing Committee

Conference Chair
Joe McCarthy
Intel Research Seattle (USA)

Program Chairs
Anind Dey
Intel Research Berkeley (USA)
Albrecht Schmidt
University of Munich (Germany)

Technical Notes Chairs
Tim Kindberg
Hewlett-Packard Labs (USA)
Bernt Schiele
ETH Zurich (Switzerland)

Demonstrations Chairs
Eric Paulos
Intel Research Berkeley (USA)
Allison Woodruff
Palo Alto Research Center (USA)

Interactive Posters Chairs
Marc Langheinrich
ETH Zurich (Switzerland)
Yasuto Nakanishi
University of Electro-Communications (Japan)

Videos Chairs
Peter Ljungstrand
PLAY, Interactive Institute (Sweden)
Jason Brotherton
Ball State University (USA)

Doctoral Colloquium Chairs
Tom Rodden
University of Nottingham (UK)

Workshops Chairs
Michael Beigl
TecO, University of Karlsruhe (Germany)
Christian Decker
TecO, University of Karlsruhe (Germany)

Panels Chair
Gerd Kortuem
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