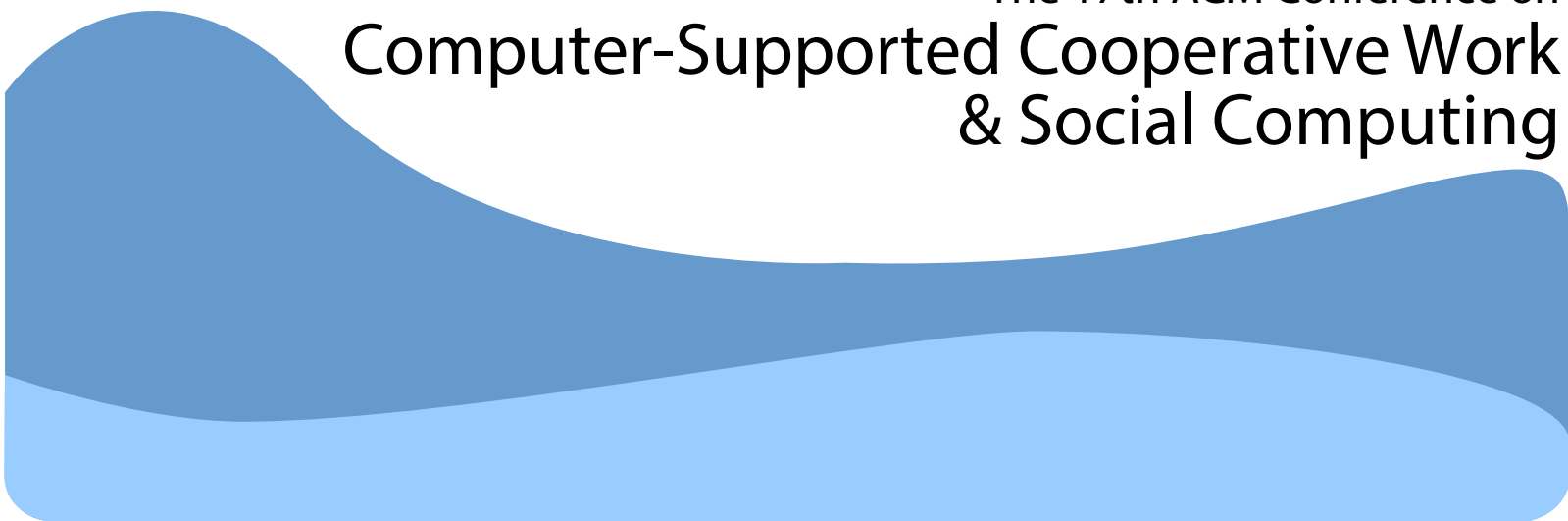# CSCW 2014

The 17th ACM Conference on
Computer-Supported Cooperative Work
& Social Computing

Conference Schedule at a Glance

MONDAY

8:45-10:15	Opening Plenary & Keynote: Mary Flanagan *(Grand Ballroom 5 & 6)*				
10:15-10:45	Coffee Break *(West Foyer)*				

	Grand Ballroom 1 & 2	*Grand Ballroom 3 & 4*	*Grand Ballroom 7 & 8*	*Grand Ballroom 9 & 10*	*Dover AB*
10:45-12:00	Friendsourcing	Crowdfunding: "Show me the Money!"	Telepresence	Blinding me with Science	Building Communities and Relationships
12:00-14:00	Lunch (On your own)				
14:00-15:15	Filter Bubbles & News	Performing Crowd Work	Work in Hospitals	Craft, Repair, and DIY	Q&A
15:15-15:45	Coffee Break *(West Foyer)*				
15:45-17:00	Posters 1	Posters 2	Demos	Video Track Session	
17:00-19:00	Interaction Reception *(Grand Ballroom 5 & 6)*				
19:30-22:00	Facebook Reception *(Heavy Seas Alehouse - 1300 Bank Street)*				

TUESDAY

	Grand Ballroom 1 & 2	*Grand Ballroom 3 & 4*	*Grand Ballroom 5*	*Grand Ballroom 6*	*Grand Ballroom 7 & 8*	*Grand Ballroom 9 & 10*	*Dover AB*
9:00-10:15	Values & Social Norms	Social Media: Online and Off	Panel: Lifestyle Teleworks Speak Out!	Social Media in the Enterprise	Family	Concurrency Control	Group Dynamics
10:15-10:45	Coffee Break *(West Foyer)* *Sponsored by Microsoft Research*						
10:45-12:00	Social Tech & Well-Being	Shopping and Collecting	CSCWhat's Next	Reflective Research	ICT4D	Leadership	Technology & Information Workers
12:00-14:00	Lunch *(On your own)*						
14:00-15:15	Romance	Crowds in Crises	Panel: CSCW in Social Media Era	Collaborative Search & Sharing	Supporting Communities	Locations & Maps	Promoting Participation & Engagement
15:15-15:45	Coffee Break *(West Foyer)* *Sponsored by Microsoft Research*						
15:45-16:45	Lasting Impact Award: Jonathan Grudin *(Grand Ballroom 5 & 6)*						
16:45-17:45	Town Hall Meeting *(Grand Ballroom 5 & 6)*						
18:00-19:00	An Evening at the National Aquarium *(National Aquarium, Pier 3 Pavilion (main entrance))*						
19:30-22:00	Conference Reception *(National Aquarium, Pier 4 Pavilion (East entrance))*						

WEDNESDAY

	Grand Ballroom 1 & 2	*Grand Ballroom 3 & 4*	*Grand Ballroom 5*	*Grand Ballroom 6*	*Grand Ballroom 7 & 8*	*Grand Ballroom 9 & 10*	*Dover AB*
9:00-10:15		Identifying Opportunities for Collaboration	Panel: The Ethos and Pragmatics of Data Sharing	Building on Others	The Office	Collaborative Software Development	Mobile Apps for Enhancing Connectedness
10:15-10:45	Coffee Break *(West Foyer)*						
10:45-12:00	Mobilizing for Action	Volunteering and Doing Good	Panel: Facebook in the Developing World	MOOCs	Parents & Children	Civic Participation	Gaming
12:00-14:00	Lunch *(On your own)*						
14:00-15:15	Social Media & Politics	Crowdsourcing Complexity	Panel: Making Cultures	Multiple Dimensions and Displays	Personal Health Management	Geographic Distance	Distributed Teams
15:15-15:45	Coffee Break *(West Foyer)*						
15:45-17:15	Closing Plenary & Keynote: Patrick Meier *(Grand Ballroom 5 & 6)*						

Welcome to the 2014 ACM Conference on Computer Supported Cooperative Work and Social Computing

We warmly welcome you to Baltimore, Maryland, USA for the 2014 ACM Conference on Computer Supported Cooperative Work and Social Computing! In keeping with previous years, CSCW 2014 presents premier research on computer-mediated collaboration, social computing, and social media, from the design of technical systems for collaboration to ethnographic studies of use in the wild. The mission of the conference is to share the novel research that will advance the state of our art. The conference program embraces a variety of perspectives, reflecting how collaboration permeates different aspects of people's work, social, and civic lives. This diversity of perspectives is mirrored by geographic diversity among contributors.

The CSCW 2014 program retains the richly articulated structure of previous conferences in this series including a robust program of workshops, papers, panels, demonstrations, videos, and interactive posters. This year, we also introduce CSCWhat's Next, a selection of forward-looking research-in-progress papers intended to foster discussion. Another innovation this year is the option for demos, videos and poster presenters to give short talks about their work immediately preceding Monday night's reception.

Special highlights this year include our opening plenary talk, "Making a Difference In and Through Playful Design," by Mary Flanagan of Dartmouth University and our closing plenary, "Next Generation Humanitarian Computing," by Patrick Meier of Qatar Computing Research Institute. We will also present the inaugural CSCW Lasting Impact Award to Jonathan Grudin for his groundbreaking 1988 paper "Why CSCW applications fail: Problems in the design and evaluation of organizational interfaces."

Interest in CSCW'14 is as high as ever, including a record number of paper submissions. The welcome message from our technical program chairs highlights the modifications to the review process this year as we continue to optimize our new revise and resubmit system.

Putting together CSCW'14 was a team effort. We first thank the authors for providing the content that is the core of our dynamic program. We are grateful to the program committee, who worked hard in reviewing papers and providing detailed feedback for authors. We heard from many about how this process truly helped improve the final papers. We thank our entire hard-working conference committee, from the papers chairs to the treasurer to the webmasters, an incredible group of people who donated countless hours of their time. We also thank Lisa Tolles at Sheridan Communications, Yvonne Lopez at RegOnline, and Ashley Cozzi and Stephanie Sabal from ACM for all of their assistance with arrangements, registration, and publications. Special thanks go out to John and Joanne Lateulere for their invaluable help with conference planning and management. Finally, we thank our sponsors ACM and SIGCHI, and generous sponsors, Facebook, Microsoft Research, National Science Foundation, Grand NCE, IBM Research, the iSchool at Drexel University, Google, and Information Systems at UMBC.

We hope that you find this program interesting and thought provoking and that the conference provides you with a valuable opportunity to share ideas with other researchers and practitioners from institutions around the world. Take time to enjoy all that Charm City has to offer.

From the Conference Chairs:
Susan Fussell, Cornell University, USA
Wayne Lutters, UMBC, USA

About the Technical Program

The CSCW research community is expanding at a tremendous pace. This year, we received a record 497 submissions – an increase of 27% from last year. Authors from 38 countries on 6 continents submitted papers. We accepted 134 papers for an acceptance rate of 27%. The growth in the number of submissions speaks to the increasing interest in CSCW. The papers range from traditional topics of interest to the CSCW community such as collaboration in work settings to newer topics such as crowdsourcing and social computing. The papers presented in this year's conference highlight the intellectual diversity of research in CSCW.

This was also the third year for the revise and resubmit (R&R) process for the conference. Similar to the process last year, we did not have page limits for the submissions, nor did we have a separate submission category for "notes" (short papers); rather, research contributions of any length were considered for the papers category. Out of the 497 papers submitted to the conference, 43% were invited to be revised and resubmitted. The overall response to the R&R process has been very positive. Many of the accepted papers were greatly improved through the revision process.

We would especially like to thank the external reviewers and Program Committee (PC) members. The revise and resubmit process would not be possible without the dedicated work of the reviewers and PC members. We had one of the largest PCs for CSCW with 64 members representing both the intellectual and geographical diversity of our community. This was a particularly challenging year for reviewing because of the record number of submissions and the reduced time frame for the review process. Without the amazing efforts of the PC members and external reviewers, we would not have been able to present the outstanding set of papers in the conference. Enjoy!

From the Program Chairs:
Meredith Ringel Morris, Microsoft Research, USA
Madhu Reddy, Penn State University, USA

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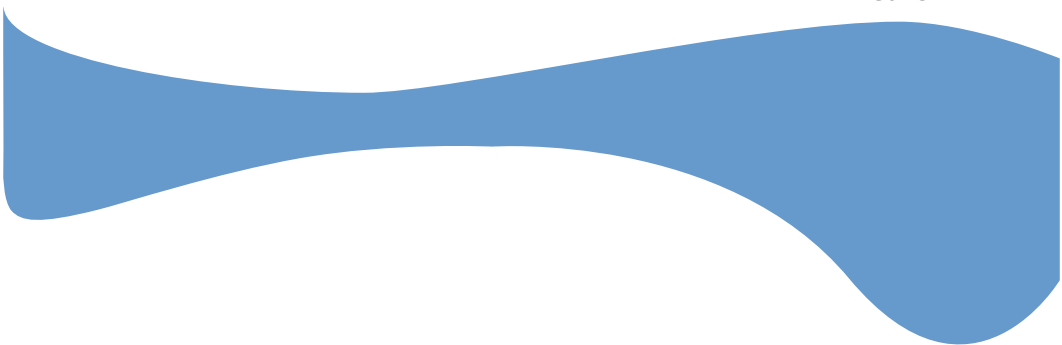
Supporters

CSCW is especially grateful for the sponsorship of the following organizations. Their support extends the number of people who can afford to participate in CSCW, including the vital participation of students in the field. We appreciate not only this support but also the active participation of these organizations in the conference planning and technical program.

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General Information

Best of CSCW Awards

Congratulations to award winners and nominees for their outstanding contributions to CSCW 2014 and to our field! The SIGCHI "Best of CSCW" awards honor exceptional submissions to SIGCHI-sponsored conferences. The CSCW Program Committee nominated submissions for consideration by the CSCW Best Papers Committee. The Best Papers Committee then reviewed all nominations and chose up to 5% of total submissions to receive honorable mention. At most 1% of the total submissions were selected to receive the "Best Paper" designation. This year, 15 papers were award honorable mention and 4 were awarded "Best Paper."

Look for these two icons next to the papers that have been designated for an award.

 CSCW 2014 Best Paper, Awarded by SIGCHI

 CSCW 2014 Best Paper Nomination

Registration

Location: Marriot Waterfront, 3rd floor

Hours

Saturday	8:00 – 15:00 (Dover Foyer)	
Sunday	8:00 – 18:00	
Monday	8:00 – 17:30	
Tuesday	8:00 – 17:30	
Wednesday	8:30 – 12:00	

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 colorful t-shirts.

Conference Policies

Blogging, Tweeting, Photograph and Slide Sharing

CSCW encourages conference participants to blog and tweet about CSCW before, during, and after the event. To allow others to easily find your posts, please add the category or keyword "cscw2014" to your blog entries and use the hash tag "#cscw2014" for your tweets. We also encourage sharing your photographs of the conference via your selected online photo service. Again, please add the tag "cscw2014" to your photos. Similarly, we encourage conference presenters to upload slides of their presentations to their preferred online slide sharing service using the tag "cscw2014".

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.

ACM and SIGCHI

CSCW 2014 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. 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). SIGCHI provides a forum for the discussion of all aspects of HCI through conferences, including the flagship CHI conference, publications, web sites, email discussion groups, courses, workshops, outreach and other services. Members can also be involved in HCI-related activities with others in their region through local SIGCHI chapters. Visit www.sigchi.org to learn more about SIGCHI.

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Anicia Peters
Helen Petrie
Tamara Peyton
Mark Pfaff
Martin Pielot
Jacqueline Pike
Fabiano Pinatti

Kathleen Pine
Niels Pinkwart
Volkmar Pipek
John Pollak
Nathan Prestopnik
*Reid Priedhorsky
*Michael Prilla
Kermit Purdy
Yan Qu
Alexander Quinn
Pablo-Alejandro Quinones
*Emilee Rader
Rebecca Randell
Nimmi Rangaswamy
Dennis Reidsma
Katharina Reinecke
Philippe Renevier Gonin
*Paul Resnick
Lindsay Reynolds
*Rebecca Reynolds
Laurel Riek
*Lionel Robert
Scott Robertson
*Christine Robson
John Rooksby
Daniela Rosner
*Chiara Rossitto
*Mary Beth Rosson
Mattias Rost
Mark Rouncefield
Daniel Russell
Ian Ruthven
Jeffrey Rzeszotarski
Alan Said
*Antti Salovaara
Nithya Sambasivan
Pedro Sanches
Vagner Santana
Flavia Santoro
Stephanie Santoso
Christopher Scaffidi
Florian Schaub
Holger Schnädelbach
*Oliver Schneider
Niko Schönau
Victoria Schwanda Sosik
*Lauren Scissors
Stacey Scott
Kate Sellen
*Bryan Semaan
Shilad Sen
Lauren Sessions Goulet
Leslie Setlock
Orit Shaer
Chirag Shah
Dafna Shahaf
N. Sadat Shami
Bin Shao
Sarika Sharma
Nikhil Sharma
*Aaron Shaw
Haifeng Shen
*S. Andrew Sheppard
Patrick Shih
Katie Shilton
Irina Shklovski

Garth Shoemaker
Leif Singer
Manya Sleeper
Nedim Slijepcevic
Daniel Smith
*Madeline Smith
Ole Smørdal
Jaime Snyder
Emma Spiro
Ann Steele
Aaron Steinfeld
Stephanie Steinhardt
David Stillwell
Jennifer Stromer-galley
H. Colleen Stuart
Fred Stutzman
Norman Su
Bongwon Suh
Nicole Sultanum
Chengzheng Sun
S. Shyam Sundar
Anthony Tang
*Charlotte Tang
*John Tang
Andrea Tapia
Yla Tausczik
Nick Taylor
Jaime Teevan
*Loren Terveen
Alexander Thayer
*William Thies
*Elizabeth Thiry
John Thomas
Peter Tolmie
Stephanie Tong
Tammy Toscos
*Zachary Toups
W. Ben Towne
Christoph Trattner
Jason Tsay
Jennifer Turns
Murray Turoff
*Michael Twidale
Judith Uchidiuno
Kalle Ulvstig
*Nancy Van House
Jos van Leeuwen
Sander van Splunter
Kami Vaniea
Radu-Daniel Vatavu
Sarah Vieweg
*John Vines
Erik Vinkhuyzen
Thomas Visser
*Jessica Vitak
Adriana Vivacqua
Juergen Vogel
Daniel Vogel
Amy Voida
Patrick Wagstrom
Jim Wallace
Yi-Chia Wang
William Yang Wang
Taowei Wang
Jing Wang
Hao-Chuan Wang
Jamie Wardman

*Rick Wash
Nic Weber
Ingmar Weber
Carolyn Wei
Nadir Weibel
Astrid Weiss
Justin Weisz
Ryen White
Mark Whiting
Jason Wiese
Andrea Wiggins
Lauren Wilcox
Wesley Willett
Amanda Williams
Matt Willis
Mathew Wilson
Pamela Wisniewski
Donghee Yvette Wohn
Maria Wolters
Allison Woodruff
Shaomei Wu
Leslie Wu
Eugene Wu
Yan Xu
Kim Xu
Anbang Xu
Huahai Yang
Mika Yasuoka
Jude Yew
Daisy Yoo
Alyson Young
G. Michael Youngblood
Lixiu Yu
Nicola Yuill
*Mark Zachry
Qiping Zhang
Jun Zhang
Haoqi Zhang
Dejin Zhao
Xiaomu Zhou
Mengxiao Zhu
Haiyi Zhu
Juergen Ziegler
Roshanak Zilouchian Mogh-
addam
John Zimmerman
Thomas Zimmermann
Arkaitz Zubiaga

9

Conference Events

Events are open to all registered conference participants.

Lasting Impact Award

Tuesday 15:45-16:45
Location: Grand Ballroom 5 & 6
Moderator: Irene Greif

Why CSCW Applications Fail: Problems in the Design and Evaluation of Organizational Interfaces (1988)
Jonathan Grudin

This is the inaugural year for the CSCW Lasting Impact Award to recognize a paper published at the CSCW conference at least 10 years prior that has been extremely influential since its publication. After a public call for nominations, the award winner was determined by the Lasting Impact Award Committee, which consists of volunteers from the past CSCW Papers Chairs. This year's winner is Jonathan Grudin, who is being recognized in a special panel session.

CSCW Town Hall Meeting

Tuesday 16:45-17:45
Location: Grand Ballroom 5 & 6

The CSCW Town Hall Meeting is a time dedicated for the SIGCHI CSCW Community steering committee to interact with attendees of CSCW 2014, harnessing their interests, and addressing their concerns about future directions of the CSCW conference series.

Conference Receptions & Social Events

Welcome Reception

Sunday 17:00-19:00
Location: Grand Foyer West, 3rd Floor

Welcome to Baltimore! We invite you to learn more about the historic seaport city of Baltimore and the great state of Maryland as you meet new friends and reconnect with old ones while overlooking the famed Inner Harbor. (Conference registration and information desks will remain open.)

Sponsored by the Marriott Waterfront and UMBC.

Interaction Reception
Monday 17:00-19:00
Location: Grand Ballroom 5 & 6

Come meet with the authors of work-in-progress posters, interact with demonstrations of innovative new systems, enjoy our video program, and learn about the activities of our doctoral colloquium and workshops. This highly interactive session is an annual highlight of the conference.

Sponsored by Facebook

Facebook Reception
Monday 19:30-22:00
Location: Heavy Seas Alehouse, 1300 Bank Street

Please join us at Heavy Seas Alehouse for drinks and fun with fellow CSCW attendees. Beat the Baltimore cold with a beer and stimulating conversation! Chat with qualitative and quantitative research ninjas from Facebook, which is hosting this party for all CSCW attendees who are 21 or older. To attend, please register online and bring your identification to the party (See conference website > Attend > Conference Receptions).

Hosted by Facebook

An Evening at the National Aquarium
Tuesday 18:00-19:00
Location: National Aquarium, Pier 3 Pavilion (main entrance)

Join us for a one-hour private walk through of the five levels of central exhibits in one of the Nation's most spectacular aquariums. Now in its 33rd year of operation, this architectural focal point of the Inner Harbor is home to 17,000 water-loving creatures. Don't miss this "must see" stop on any visit to Charm City.

Conference Reception
Tuesday 19:00-22:00
Location: National Aquarium, Pier 4 Pavilion (east entrance)

An evening of dinner, drinks, and high-energy networking in the heart of the Aquarium's Pier 4 Pavilion. The Atrium provides two stories of social space with plenty of conversation nooks. Two adjoining exhibits will remain open during the reception: "Dolphin Discovery," the residential complex for the Aquarium's dolphin community, and "Jellies Invasion: Oceans Out of Balance," a mesmerizing exhibit showcasing different species of jellyfish.

Workshops

Workshops provide a valuable opportunity for small communities of people with diverse perspectives to engage in rich day-long discussions about a topic of common interest. Workshop participants are pre-selected based on submitted position papers. Look for the results of workshop activities to be on display at the Interaction Reception on Monday evening.

Workshops start at 9:00 with coffee breaks at 10:15 and 15:15. Lunch is included.

Saturday Workshops

W1: Sharing, Re-use and Circulation of Resources in Cooperative Scientific Work
Location: Grand Ballroom 2
Theresa Velden, *University of Michigan, USA*
Matthew J. Bietz, *University of California, Irvine, USA*
E. Ilana Diamant, *University of Washington, USA*
James D. Herbsleb, *Carnegie Mellon University, USA*
James Howison, *University of Texas at Austin, USA*
David Ribes, *Georgetown University, USA*
Stephanie B. Steinhardt, *Cornell University, USA*

W2: Structures for Knowledge Co-creation Between Organisations and the Public
Location: Grand Ballroom 1
Laura Carletti, *University of Nottingham, United Kingdom*
Tim Coughlan, *University of Nottingham, United Kingdom*
Jon Christensen, *University of California, Berkeley, USA*
Elizabeth Gerber, *Northwestern University, USA*
Gabriella Giannachi, *University of Exeter, United Kingdom*
Stefan Schutt, *Victoria University, Australia*
Rebecca Sinker, *Tate, United Kingdom*
Carlos Denner dos Santos, *University of Brasilia, Brazil*

W3: Designing with Users for Domestic Environments: Methods - Challenges - Lessons Learned
Location: Dover A
Corinna Ogonowski, *University of Siegen, Germany*
Benedikt Ley, *University of Siegen, Germany*
David Randall, *University of Siegen, Germany*
Mu Mu, *Lancaster University, United Kingdom*
Nicholas Race, *Lancaster University, United Kingdom*
Mark Rouncefield, *Lancaster University, United Kingdom*

W4: Cross-Cultural Studies of Collaborative Systems: Making Methodological Advances as a Community
Location: Grand Ballroom 4
Pamela Hinds, *Stanford University, USA*
Katharina Reinecke, *Harvard University, USA*

W5: Designing Futures for Peer-to-Peer Learning @ CSCW
Location: Grand Ballroom 3
Peyina Lin, *University of Washington, USA*
Ricarose Roque, *MIT Media Lab, USA*
Peter Wardrip, *University of Pittsburgh, USA*
June Ahn, *University of Maryland—College Park, USA*
Benjamin Shapiro, *Tufts University, USA*

W10: Collaboration and Coordination in the Context of Informal Care (CCCiC 2014)
Location: Dover B
Hilda Tellioğlu, *Vienna University of Technology, Austria*
Myriam Lewkowicz, *Université de Technologie de Troyes, France*
Aparecido Fabiano Pinatti De Carvalho, *Vienna University of Technology, Austria*
Ivan Breŝković, *Vienna University of Technology, Austria*
Marén Schorch, *University of Siegen, Germany*

W14: OCData Hackathon: Online Communities Data Hackathon
Location: Dover C
Sean Goggins, *University of Missouri, USA*
Andrea Wiggins, *Cornell University, USA*
Susan Winter, *University of Maryland—College Park, USA*
Brian Butler, *University of Maryland—College Park, USA*

Sunday Workshops

W6: Back to the Future of Organizational Work: Crowdsourcing and Digital Work Marketplaces
Location: Dover A
Melissa Cefkin, *IBM Research, USA*
Obinna Anya, *IBM Research, USA*
Steve Dill, IBM Research, USA
Bob Moore, *IBM Research, USA*
Osarieme Omokaro, *University of North Carolina – Charlotte, USA*
Susan Stucky, *IBM Research, USA*

W7: Co-creating & Identity-making in CSCW: Revisiting Ethics in Design Research
Location: Grand Ballroom 1
Stacy Branham, *Virginia Tech, USA*
Steve Harrison, *Virginia Tech, USA*
Deborah Tatar, *Virginia Tech, USA*
Lisa Nathan, *University of British Columbia, Canada*
Anja Thieme, *Newcastle University, United Kingdom*

W9: The Fourteenth International Workshop on Collaborative Editing Systems
Location: Dover C
Michael MacFadden, *SOLUTE Consulting, USA*
Agustina, *Nanyang Technological University, Singapore*
Ning Gu, *Fudan University, China*
Claudia-Lavinia Ignat, *INRIA Nancy-Grand Est, France*
Haifeng Shen, *Flinders University, Australia*
David Sun, *University of California Berkeley, USA*
Chengzheng Sun, *Nanyang Technological University, USA*

W11: Global Software Development in a CSCW Perspective
Location: Dover B
Pernille Bjørn, *UC Irvine, USA*
Jakob Bardram, *IT University of Copenhagen, Denmark*
Gabriela Avram, *University of Limerick, Ireland*
Liam Bannon, *University of Limerick, Ireland*
Alexander Boden, *Fraunhofer FIT, Germany*
David Redmiles, *UC Irvine, USA*
Cleidson R. B. de Souza, *Vale Institute of Technology and UFPA, Brazil*
Volker Wulf, *University of Siegen, Germany*

W12: Feminism and Social Media Research
Location: Grand Ballroom 2
Libby Hemphill, *Illinois Institute of Technology, USA*
Ingrid Erickson, *Rutgers University, USA*
Ines Mergel, *Syracuse University, USA*
David Ribes, *Georgetown University, USA*

Doctoral Colloquium

The Doctoral Colloquium is a forum in which Ph.D. students meet and discuss their work with each other and with a panel of experienced CSCW researchers and practitioners. Students are selected to participate in the colloquium through a competitive review process. The colloquium will begin with dinner Saturday, February 15 and will continue all day Sunday, February 16. Students will display posters of their research during the Interaction Reception Monday evening.

Location: Atlantic

Doctoral Colloquium Mentors

Claus Bossen (co-chair), *Aarhus University, Denmark*
Darren Gergle (co-chair), *Northwestern University, USA*
Laura Dabbish, *Carnegie Mellon University, USA*
Kate Ehrlich, *IBM T.J. Watson Research, USA*
Volkmar Pipek, *University of Siegen, Germany*
Kate Starbird, *University of Washington, USA*

Doctoral Colloquium Participants

Values and Negotiation in Classification Work
Julia Bullard, *University of Texas, USA*

Copyright and Social Norms in Communities of Content Creation
Casey Fiesler, *Georgia Institute of Technology, USA*

On the Quest of Discovering Cultural Trails in Social Media
Ruth Garcia-Gavilanes, *Pompeu de Fabra University, Spain*

Emerging Innovation: The Global Expansion of Seed Accelerators
Julia Haines, *University of California, Irvine, USA*

Studying the Application of Mobile Technology to Local Communities
Kyungsik (Keith) Han, *Penn State University, USA*

Specializing Social Networking Services for Young Adults with Autism
Hwajung Hong, *Georgia Institute of Technology, USA*

Display Design to Support Awareness During Emergency Medical Teamwork
Diana Kusunoki, *Drexel University, USA*

Is there a Place for Serendipitous Introductions?
Julia Mayer, *New Jersey Institute of Technology, USA*

Rethinking the Peer Review Process
Syavash Nobarany, *University of British Columbia, Canada*

Supporting Collaborative Care in an Emergency Department (ED) Through Patient Awareness
Sunyoung Park, *University of California, Irvine, USA*

Designing Effective Strategies For Human-Robot Collaboration
Allison Sauppé, *University of Wisconsin, USA*

Where the paddle meets the stream: Bridging Systems Design Theory and Community Monitoring Practice
Andrew Sheppard, *University of Minnesota, USA*

Connecting Students and Families for Support During the College Transition
Madeline Smith, *Northwestern University, USA*

Software Developers are Humans, Too!
Bogdan Vasilescu, *Eindhoven University of Technology, The Netherlands*

Understanding & Advancing Collaborative Scientific Knowledge Creation
Alyson Young, *University of Maryland , Baltimore County, USA*

MONDAY

	Grand Ballroom 1 & 2	Grand Ballroom 3 & 4	Grand Ballroom 7 & 8	Grand Ballroom 9 & 10	Dover AB
8:45–10:15	Opening Plenary & Keynote: Mary Flanagan *(Grand Ballroom 5 & 6)*				
10:15–10:45	Coffee Break *(West Foyer)*				
10:45–12:00	Friendsourcing	Crowdfunding: "Show me the Money!"	Telepresence	Blinding me with Science	Building Communities & Relationships
12:00–14:00	Lunch *(On your own)*				
14:00–15:15	Filter Bubbles & News	Performing Crowd Work	Work in Hospitals	Craft, Repair, and DIY	Q&A
15:15–15:45	Coffee Break *(West Foyer)*				
15:45–17:00	Posters 1	Posters 2	Demos	Video Track Session	
17:00–19:00	Interaction Reception *(Grand Ballroom 5 & 6)*				
19:30–22:00	Facebook Reception *(Heavy Seas Alehouse - 1300 Bank Street)*				

Session with Best Paper Nomination

Session With Best Paper Award

Opening Plenary and Keynote:

Location: Grand Ballroom 5 & 6

Mary Flanagan, *Sherman Fairchild Distinguished Professor in Digital Humanities Dartmouth College*

Making a Difference In and Through Playful Design

How can design (broadly thought) and creative thought in technology, "make a difference" empirically and conceptually from the point of view of 4design practice? In the world of social impact design, how do designers know if they have the right approach for the best outcomes? In this talk, Tiltfactor laboratory director and Dartmouth professor Mary Flanagan shares strategies for design, focusing on cooperative interactions and the unintended consequences of designers' actions. Urging designers to ask big questions about where our technology is heading and how we might improve it from a social justice perspective, Flanagan offers actionable approaches to these questions through design examples and case studies of specific projects from her innovative game design work at Tiltfactor.org.

Mary Flanagan (@criticlaplay) -- founder of the Tiltfactor research lab as well as an artist, writer, and scholar -- will share recent research on how games can influence and change attitudes, opinions, and behaviors. Flanagan expands the boundaries of medium, discipline, and genre across writing, visual arts, computer science, psychology, and design to innovate in these fields with a critical play-centered approach. She is interested in collaboration, social impact, and creating paradigms for productive social interaction based on our inherent capacity for play-- while highlighting and prioritizing human values in the design of new technologies and systems.

As an artist, her collection of over 20 major works range from game-inspired systems to computer viruses, embodied interfaces to interactive texts; these works are exhibited internationally. As a scholar interested in how human values are in play across technologies and systems, Flanagan has written more than 20 critical essays and chapters on games, empathy, gender and digital representation, art and technology, and responsible design. Her recent books include Critical Play (2009, MIT Press) and Values at Play in Digital Games with Helen Nissenbaum (2014, MIT Press). Flanagan's work has been supported by grants and commissions including The British Arts Council, the National Endowment for the Humanities, the Robert Wood Johnson Foundation, the ACLS, and the National Science Foundation. Flanagan is the Sherman Fairchild Distinguished Professor in Digital Humanities at Dartmouth College.

Web: http://www.maryflanagan.com

MONDAY

Monday 10:45 – 12:00

Friendsourcing
Location: Grand Ballroom 1 & 2
Chair: Sharoda Paul, *GE Global Research, USA*

Help is on the Way: Patterns of Responses to Resource Requests on Facebook
Cliff Lampe, *University of Michigan, USA*
Rebecca Gray, *Michigan State University, USA*
Andrew T Fiore, *Facebook, USA*
Nicole Ellison, *University of Michigan, USA*

Social network sites can support social capital exchanges, which are often triggered by requests for assistance, such as seeking recommendations or asking for favors. Responsiveness to these requests for help is important to study because these interactions may affect users' overall satisfaction with the experience of using SNSs, signal social grooming functions essential to relationship maintenance, and affect social capital processes. In this paper, we study a corpus of public status updates posted to Facebook (N=7,466) in order to identify the pattern of responses to status updates that attempt to mobilize resources from the poster's Facebook network. Findings suggest that mobilization requests are treated differently than other kinds of posts; posts that attempt to mobilize help receive more comments than non-mobilization attempts. Additionally, responses occur more quickly and are shaped by the type of support requested (e.g., a recommendation vs. a favor). These findings help us better understand the role of help-seeking behaviors in the social capital conversion process as it unfolds via social media.

To Search or to Ask: The Routing of Information Needs Between Traditional Search Engines and Social Networks
Anne Oeldorf-Hirsch, *University of Connecticut, USA*
Brent Hecht, *University of Minnesota, USA*
Meredith Ringel Morris, *Microsoft Research, USA*
Jaime Teevan, *Microsoft Research, USA*
Darren Gergle, *Northwestern University, USA*

In status message question asking (SMQA), members of social networking sites make use of status messages to express information needs to friends and contacts. We present findings from a laboratory study that examined 82 participants' SMQA behaviors in the broader context of online information seeking. When given the option of using a search engine and/or a social network, we found that participants leveraged SMQA for 20% of their information needs, most often posing a question to their network in addition to issuing a query. We show the important roles played by the specificity of the information need and the perceived audience of a given network on routing decisions. We then demonstrate that information needs and routing decisions have varied effects on participants' satisfaction, information value, and trust of outcomes. In addition to highlighting the complementary benefits and disadvantages of search and SMQA, our findings suggest that search engines can better address a proportion of people's information needs by integrating SMQA capabilities into their systems.

What Do Teens Ask Their Online Social Networks? Social Search Practices among High School Students
Andrea Forte, *Drexel University, USA*
Michael Dickard, *Drexel University, USA*
Rachel Magee, *Drexel University, USA*
Denise E. Agosto, *Drexel University, USA*

The majority of American teens use social network sites (SNSs) but little is known about how they leverage their online social networks to find information. As part of a larger study on social media and information behaviors, we surveyed 158 high school students to learn about their online question asking and answering practices. We describe which teens are most likely to ask and answer questions, what they ask about, on which sites they ask questions, and how useful they perceive SNSs to be as information sources. When possible, we draw comparisons with findings in the literature about adult populations. We contextualize these findings using early insights from interviews and focus groups with 70 teens and discuss how perceptions of audience, privacy concerns, and self-presentation all play a role in teens use of SNSs to ask and answer questions.

Crowdfunding: "Show me the Money!"
Location: Grand Ballroom 3 & 4
Chair: Michael Bernstein, *Stanford University, USA*

Coordinating Donors on Crowdfunding Websites
Rick Wash, *Michigan State University, USA*
Jacob Solomon, *Michigan State University, USA*

Crowdfunding websites like Kickstarter, Spot.Us and Donor's Choose seek to fund multiple projects simultaneously by soliciting donations from a large number of donors. These websites also seek to coordinate donations so that each project receives enough money to actually succeed. Each crowdfunding project sets a goal for donations required and a deadline in which to receive them. Crowdfunding site designers must decide what to do with donations to projects that don't reach their goal by the deadline. Some crowdfunding sites use an all-or-nothing return rule in which donations are returned to donors if a project doesn't met its goal. Other sites use a direct donation structure where all donations are kept by the project even if the total is insufficient. Using a lab experiment that simulates a crowdfunding website, we find that the return rule mechanism leads to a marginal improvement in productivity, but a considerable loss in efficiency. The direct donation model, though, encourages donors to coordinate.

MONDAY

MONDAY

The Language that Gets People to Give: Phrases that Predict Success on Kickstarter

Tanushree Mitra, *Georgia Institute of Technology, USA*
Eric Gilbert, *Georgia Institute of Technology, USA*

Crowdfunding sites like Kickstarter--where entrepreneurs and artists look to the internet for funding--have quickly risen to prominence. However, we know very little about the factors driving the "crowd" to take projects to their funding goal. In this paper we explore the factors which lead to successfully funding a crowdfunding project. We study a corpus of 45K crowdfunded projects, analyzing 9M phrases and 59 other variables commonly present on crowdfunding sites. The language used in the project has surprising predictive power--accounting for 58.56% of the variance around successful funding. A closer look at the phrases shows they exhibit general persuasion principles. For example, also receive two reflects the principle of Reciprocity and is a top predictor of successful funding. We conclude this paper by announcing the release of the predictive phrases and the control variables as a public dataset, hoping that our work can enable new features on crowdfunding sites--tools to help both backers and project creators make the best use of their time and money.

Understanding the Role of Community in Crowdfunding Work

Julie S Hui, *Northwestern University, USA*
Michael D Greenberg, *Northwestern University, USA*
Elizabeth M Gerber, *Northwestern University, USA*

Crowdfunding provides a new opportunity for entrepreneurs to launch ventures without having to rely on traditional funding mechanisms, such as banks and angel investing. Despite its rapid growth, we understand little about how crowdfunding users build ad hoc online communities to undertake this new way of performing entrepreneurial work. To better understand this phenomenon, we performed a qualitative study of 47 entrepreneurs who use crowdfunding platforms to raise funds for their projects. We identify community efforts to support crowdfunding work, such as providing mentorship to novices, giving feedback on campaign presentation, and building a repository of example projects to serve as models. We also identify where community efforts and technologies succeed and fail at supporting the work in order to inform the design of crowdfunding support tools and systems.

Telepresence

Location: Grand Ballroom 7 & 8
Chair: Gina Venolia, *Microsoft Research, USA*

Smart Face: Enhancing Creativity During Video Conferences using Real-time Facial Deformation

Naoto Nakazato, *The University of Tokyo, Japan*
Shigeo Yoshida, *The University of Tokyo, Japan*
Sho Sakurai, *The University of Tokyo, Japan*
Takuji Narumi, *The University of Tokyo, Japan*
Tomohiro Tanikawa, *The University of Tokyo, Japan*
Michitaka Hirose, *The University of Tokyo, Japan*

This study develops a method for improving creativity by changing the facial appearance of people during video conferences. We focus on enhancing creativity during human interactions, especially cooperative work situations such as video conferences. Psychological studies have revealed that the facial appearance of people can affect creativity, i.e., "emotion can affect creativity" and "the appearance of others can affect the emotions." Based on the knowledge, we hypothesized that the media technology which modifies the facial appearance of people appropriately can enhance our creativity during cooperative work. Therefore, we develop a method to affect creativity by changing the facial appearance in real-time, such as facial expressions and facial resemblance. We test the effectiveness of this method by building a system for collaborative video conferences. The user study show that the proposed method could enhance creativity.

Towards a Questionnaire for Measuring Affective Benefits and Costs of Communication Technologies

Svetlana Yarosh, *AT&T Research Labs, USA*
Panos Markopoulos, *Eindhoven University of Technology, Netherlands*
Gregory D Abowd, *Georgia Institute of Technology, USA*

As CSCW creates and investigates technologies for social communication, it is important to understand the emotional benefits and costs of these systems. We propose the Affective Benefits and Costs of Communication Technologies (ABCCT) questionnaire to supplement traditional qualitative methods of understanding communication media. We discuss the pilots of this survey with 45 children and 110 adults measuring the inter-item reliability of this instrument. We present the results of interviews with 14 children and 14 adults, which help confirm that the ABCCT measures the same constructs that may emerge through interview investigations. Finally, we demonstrate that the ABCCT is sensitive enough to discriminate between different communication technologies and has shown promise in some of its early adoption. Though the ABCCT is not without limitations, it may provide a way to compare technologies in field deployments, draw findings across investigations, and quantify the impact of specific design decisions.

How Social Cues Shape Task Coordination and Communication

Allison Sauppé, *University of Wisconsin, Madison, USA*
Bilge Mutlu, *University of Wisconsin, Madison, USA*

To design computer-supported collaborative work (CSCW) systems that effectively support remote collaboration, designers need a better understanding of how people collaborate face-to-face and the mechanisms that they use to coordinate their actions. While research in CSCW has studied how specific social cues might facilitate collaboration in specific tasks, such as the role of gestures in video instruction, how a range of communicative cues might facilitate activities across many collaborative settings is unknown. In this paper, we model the predictive relationships between facial, gestural, and vocal cues and collaborative outcomes in three different tasks, drawing conclusions on how each cue might contribute to these outcomes in a given task and how such relationships generalize across tasks. The results highlight differences in how collaborators use gaze, the importance of shared context for some tasks, and how different gestures (particularly deictic gestures) facilitate collaborative outcomes. Our findings offer key theoretical and design insights.

Blinding me with Science

Location: Grand Ballroom 9 & 10
Chair: Jacki O'Neill, *Xerox Research Center Europe, France*

Planet Hunters and Seafloor Explorers: Legitimate Peripheral Participation Through Practice Proxies in Online Citizen Science

Gabriel Mugar, *Syracuse University, USA*
Carsten Østerlund, *Syracuse University, USA*
Katie DeVries Hassman, *Syracuse University, USA*
Kevin Crowston, *Syracuse University, USA*
Corey Brian Jackson, *Syracuse University, USA*

Making visible the process of user participation in online crowd sourced initiatives has been shown to help new users understand the norms of participation. However, in many setting, participants lack full access to others' work. Merging the theory of legitimate peripheral participation with Erickson and Kellogg's theory of social translucence we introduce the concept of practice proxies: traces of user participation in online environment that act as resources to orient newcomers towards the norms of practice. Through a combination of virtual and trace ethnography we explore how new users in two online citizen science projects engage with these traces of practice as a way of compensating for a lack of access to the process of the work itself. Our findings suggest that newcomers seek out practice proxies in the social features of the projects that highlight contextualized and specific characteristics of primary work practice.

Study of Electronic Lab Notebook Design and Practices that Emerged in a Collaborative Scientific Environment

Gerard Oleksik, *Dovetailed Ltd, UK*
Natasa Milic-Frayling, *Microsoft Research Ltd, UK*
Rachel Jones, *Instrata Ltd, UK*

Prolific adoption of digital media across scientific fields has led to inevitable transformation of a traditional lab book into an electronic lab notebook (ELN). Research so far has focussed on designing ELN prototypes and learning from their limited deployments. At the same time, a variety of commercially available ELNs have been adopted by industrial and academic laboratories. That provides opportunities for situated research and a deeper understanding of the role that ELNs assumes as an integral part of a scientific environment. In this paper we present a study of ELN design that has emerged as scientists appropriated commercial off-the-shelf note-taking software and adapted it to their work. Through in-situ observations we analysed the interplay between the technology and emerging practices. Our study revealed a tension that is intrinsic to the digital nature of ELNs: a conflict between the flexibility, fluidity, and low threshold for modifying digital records and the requirement for persistence and consistency. This led to refined requirements and design considerations for ELNs.

Reconciling Rhythms: Plans and Temporal Alignment in Collaborative Scientific Work

Stephanie B Steinhardt, *Cornell University, USA*
Steven J Jackson, *Cornell University, USA*

Collaborative scientific work depends on the alignment of multiple and often discordant temporal rhythms. Under such conditions, plans and planning assume a central role and challenge. Plans bridge and coordinate rhythms and events emanating from the organizational, infrastructural, biographical and phenomenal dimensions of collaborative life. Plans align rhythms embedded in local practice with those operating at larger institutional levels, and establish shared temporal baselines around which local choice and action may be calibrated. This paper develops these arguments through ethnographic study of the Ocean Observing Initiative, a prominent U.S.-based large-scale long-term collaborative research program in the ocean sciences. We emphasize the intersection between rhythms and plans at two crucial moments: formation ('plans-in-the-making'), and enactment ('plans-in-action') across complex fields of practice. Our findings hold important implications for CSCW research and practice around scientific and large-scale collaborative efforts, and for federal science policies meant to support productive forms of cooperation and discovery.

Building Communities and Relationships

Location: Dover AB
Chair: Daniel Wigdor, *University of Toronto, Canada*

Building Loyalty to Online Communities through Bond and Identity-based Attachment to Sub-groups

Yla R. Tausczik, *Carnegie Mellon University, USA*
Laura A. Dabbish, *Carnegie Mellon University, USA*
Robert E Kraut, *Carnegie Mellon University, USA*

Researchers and theorists have proposed that feelings of attachment to subgroups within a larger online community or site can increase users' loyalty to the site. They have identified two types of attachment to these groups, with distinct causes and consequences. With bond-based attachment, people feel connections to other group members, while with identity-based attachment they feel connections to the group as a whole. In two experiments we show that these feelings of attachment to subgroups do increase commitment to the larger community. Communication with other people in a subgroup but not simple awareness of them increases attachment to the larger community. By varying how the communication is structured, between dyads or with all group members simultaneously, the experiments show that bond and identity-based attachment have different causes. But the experiments show no evidence that bond and identity attachment have different consequences. We consider both theoretical and methodological reasons why the consequences of bond-based and identity-based attachment are so similar.

Ethnography of Scaling, Or, How to a fit a national research infrastructure in the room

David Ribes, *Georgetown University, USA*

Ethnographers have traditionally studied people in particular times and places. However, sociotechnical systems are often long-term enterprises, spanning the globe and serving vast communities. Drawing from three cases of research infrastructure development, this paper demonstrates a methodology in which the ethnographer examines scalar devices: techniques and technologies for knowing and managing large-scale objects. Such devices are enacted in and across concrete times and places; for the ethnographer they are observable as activities of scaling. By examining activities of scaling we can better understand diverse kinds of size and growth within sociotechnical systems.

Enabling Relationship Building in Tabletop-supported Advisory Settings

Peter Heinrich, *University of Zurich, Switzerland*
Mehmet Kilic, *University of Zurich, Switzerland*
Felix-Robinson Aschoff, *University of Zurich, Switzerland*
Gerhard Schwabe, *University of Zurich, Switzerland*

Recent research has shown that financial advisory encounters can successfully be supported with IT-artifacts. Tabletop scenarios, for example, can increase the transparency of the advisory process for customers. However, we have also had the experience that the relationship quality as experienced by customers can suffer severely when IT-artifacts are introduced. Based on these experiences, we developed guidelines for both, the artifact design itself as well as for the environment in order to avoid this effect, and implemented them in one of our prototypes. The evaluation reveals that these measures proved to be effective. With the reported study, we seek to enhance our design knowledge of IT-supported advisory scenarios with a special focus on relationship building. In a larger context, we argue that the use of IT during sensitive face-to-face encounters will be of growing significance in the future but, as yet, is hardly understood. We make a contribution in this area with our generic requirements, design principles and evaluation.

Monday 14:00 – 15:15

Filter Bubbles & News

Location: Grand Ballroom 1 & 2
Chair: Kate Starbird, *University of Washington, USA*

Can You Hear Me Now? Mitigating the Echo Chamber Effect by Source Position Indicators

Q. Vera Liao, *University of Illinois at Urbana-Champaign, USA*
Wai-Tat Fu, *University of Illinois at Urbana-Champaign, USA*

We examined how a source position indicator showing both valences (pro/con) and magnitudes (moderate/extreme) of positions on controversial topics influenced users' consumption of diverse opinions in online discussions. We found that the indicator had differential impacts on people who had varied levels of accuracy motives - i.e., motivation to accurately learn about the topic. For users with high accuracy motives, the indicator promoted selection of sources that were moderately inconsistent with their existing attitudes, thus increased their exposure to attitude challenging information. The indicator, however, had little effect on users with low accuracy motives. The indicator also helped users differentiate between sources with moderate and extreme positions, and increased their tendency to agree with challenging information from sources with moderately inconsistent positions. Users with high accuracy motives were also found to learn significantly more about the arguments put forward by the opposite side with the help of the indicator. Implications for designing information systems that encourage exposure to diverse information were discussed.

Deep Twitter Diving: Exploring Topical Groups in Microblogs at Scale

Parantapa Bhattacharya, *IIT Kharagpur, India / Max Planck Institute of Software Systems, Germany*

Saptarshi Ghosh, *Bengal Engineering and Science University Shibpur, India / Max Planck Institute of Software Systems, Germany*

Juhi Kulshrestha, *Max Planck Institute of Software Systems, Germany*

Mainack Mondal, *Max Planck Institute of Software Systems, Germany*

Muhammad Bilal Zafar, *Max Planck Institute of Software Systems, Germany*

Niloy Ganguly, *IIT Kharagpur, India*

Krishna P. Gummadi, *Max Planck Institute of Software Systems, Germany*

We present a semantic methodology to identify topical groups in Twitter on a large variety of topics, each consisting of users who are experts on or interested in a specific topic. Early studies investigating the nature of Twitter, suggest that it is a social media platform consisting of a relatively small section of elite users, producing information on few popular topics such as media, politics, and music, and the general population consuming it. We show that this narration ignores a rich set of highly specialized topics, ranging from geology, neurology, to astrophysics and karate, being discussed by their own topical groups. We present a detailed characterization of these topical groups based on their network structures and tweeting behaviors. Analyzing these groups on the backdrop of the common identity and bond theory in social sciences, shows that these groups exhibit characteristics of topical identity based groups, rather than social bond based ones.

Characterizing the Life Cycle of Online News Stories Using Social Media Reactions

Carlos Castillo, *Qatar Computing Research, Qatar*
Mohammed El-Haddad, *Al Jazeera English, Qatar*
Jürgen Pfeffer, *Carnegie Mellon University, USA*
Matt Stempeck, *Massachusetts Institute of Technology, USA*

This paper presents a study of the life cycle of news articles posted online. We describe the interplay between website visitation patterns and social media reactions to the news content. We show that we can use this hybrid observation method to characterize distinct classes of articles. We also find that social media reactions can be used to predict future visitation patterns early and accurately. We validate our methods using qualitative analysis as well as quantitative analysis on data from a large international news network, for a set of articles generating more than 3,000,000 visits and 200,000 social media reactions. We show that it is possible to model accurately the overall traffic articles will ultimately receive by observing the first ten to twenty minutes of social media reactions. Achieving the same prediction accuracy with visits alone would require to wait for three hours of data. We also describe significant improvements on the accuracy of the early prediction of shelf-life for news stories.

Performing Crowd Work

Location: Grand Ballroom 3 & 4
Chair: Dan Cosley, *Cornell University, USA*

Being A Turker

David B Martin, *Xerox Research Center Europe, France*
Benjamin V Hanrahan, *Xerox Research Center Europe, France*
Jacki O'Neill, *Xerox Research Center Europe, France*
Neha Gupta, *Nottingham University, UK*

Crowdsourcing is a key current topic in CSCW. We build upon findings of a few qualitative studies of crowdworkers. We conducted a virtual ethnography of Turker Nation, a general forum for Amazon Mechanical Turk (AMT) users. Using forum data we provide novel depth and detail on how the Turker Nation members operate as economic actors, working out which Requesters and jobs are worthwhile to them. We show some of key the ways Turker Nation functions as a community and also look further into Turker-Requester relationships from the Turker perspective - considering practical, emotional and moral aspects. Finally, we analyse Turking as a form of invisible work. We do this to illustrate practical and ethical issues relating to working with Turkers and AMT, and to promote design directions to support Turkers and their relationships with Requesters.

The Motivations and Experiences of the On-Demand Mobile Workforce

Rannie Teodoro, *Rutgers University, USA*
Pinar Ozturk, *Stevens Institute of Technology, USA*
Mor Naaman, *Cornell Tech, USA*
Winter Mason, *Stevens Institute of Technology, USA*
Janne Lindqvist, *Rutgers University, USA*

On-demand mobile workforce applications match physical world tasks and willing workers. These systems offer to help conserve resources, streamline courses of action, and increase market efficiency for micro- and mid-level tasks, from verifying the existence of a pothole to walking a neighbor's dog. This study reports on the motivations and experiences of individuals who regularly complete physical world tasks posted in on-demand mobile workforce marketplaces. Data collection included semi-structured interviews with members (workers) of two different services. The analysis revealed the main drivers for participating in an on-demand mobile workforce, including desires for monetary compensation and control over schedules and task selection. We also reveal main reasons for task selection, which involve situational factors, convenient physical locations, and task requester profile information. Finally, we discuss the key characteristics of the most worthwhile tasks and offer implications for novel crowdsourcing systems for physical world tasks.

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Information Extraction and Manipulation Threats in Crowd-Powered Systems

Walter S Lasecki, *University of Rochester, USA*
Jaime Teevan, *Microsoft Research, USA*
Ece Kamar, *Microsoft Research, USA*

Crowd-powered systems have become a popular way to augment the capabilities of automated systems in real-world settings. Many of these systems rely on human workers to evaluate potentially sensitive data or make important decisions. This puts these systems at risk of unintentionally releasing data or having their outcomes maliciously manipulated. While almost all crowd-powered approaches account for noise in the work of individual workers, few factor in active attacks on the system. We analyze different forms of threats from individuals and groups of workers to extract information from crowd-powered systems and to manipulate outcomes. Via a set of studies performed on Amazon's Mechanical Turk platform, we demonstrate the viability of these threats. We show that the current system is vulnerable to coordinated attacks on a task based on the requests of another and that a significant portion of Mechanical Turk workers are willing to contribute to an attack. Our findings enable the crowd to continue to play an important part in increasingly critical situations.

Work in Hospitals

Location: Grand Ballroom 7 & 8
Chair: Aleksandra Sarcevic, *Drexel University, USA*

How Physicians "Achieve Overview": A Case-based Study in a Hospital Ward

Claus Bossen, *Aarhus University, Denmark*
Lotte Groth Jensen, *Aarhus University, Denmark*

Clinicians' work in hospitals is safety- and time-critical, and often stressful due to the number and complexity of patient cases they must attend to. Therefore, how clinicians gather information, identify problems and make decisions concerning patients is a crucial concern, a process that can be labelled 'achieving overview'. In the process, clinicians use various artefacts amongst which medical records are central. Decades of experience is embedded in the structure and use of paper-based records. However, the development of electronic patient records (EPR) will change both structure and use of medical records, including 'achieving overview'. We conducted an ethnographic study in a hospital ward using paper-based medical records in order to understand how clinicians achieve overview'. Inspired by the approach of exnovation, we elicit the use of paper-based records in order to inform the design of EPRs. We propose five axes which span out the process of achieving overview and describe implications for design of EPRs.

Privacy Practices in Collaborative Environments: A Study of Emergency Department Staff

Alison R. Murphy, *Pennsylvania State University, USA*
Madhu C. Reddy, *Pennsylvania State University, USA*
Heng Xu, *Pennsylvania State University, USA*

Privacy research has long focused on the individual. Yet most organizations are highly collaborative where teamwork is the norm. To examine privacy practices in collaborative settings, we conducted an ethnographic study of a highly collaborative and information-intensive setting - an emergency department (ED). We found that ED staff work practices did not always align with the organization's privacy policies and procedures. We then discuss the use of workarounds when privacy policies interfere with work practices, the challenge of assigning accountability for enforcing privacy in collaborative environments, and implications for technical and policy design. We conclude with some thoughts on the future of privacy research in collaborative settings.

Institutional Logics of the EMR and the Problem of 'Perfect' but Inaccurate Accounts

Kathleen H Pine, *University of California, Irvine, USA / Intel Labs, USA*
Melissa Mazmanian, *University of California, Irvine, USA*

EMR promise to simultaneously enhance coordination and provide transparency and accountability in work process. In this paper we use empirical data to explore how this promise plays out in the everyday tasks of clinicians. Building on CSCW literature that suggests that the accounting functions of EMR are impinging on coordination of work, we draw on new institutionalism to outline how certain institutional logics around safety are shaping experiences of EMR in-situ. We suggest that institutionalized logics of U.S. healthcare are embedded in the EMR design itself, structuring how "safety" is achieved and evaluated. Using over one year of ethnographic research in an obstetrical unit, we find that the institutional logics of "safety" embedded in the EMR create negative organizational outcomes, undermining coordination and necessitating inaccurate accounts of work. We provide design implications to address these issues in the current institutional environment and envision how systems might be designed to promote alternate logics of safety that are social, dynamic, and cast humans as expert agents.

Craft, Repair, and DIY

Location: Grand Ballroom 9 & 10
Chair: Volker Wulf, *University of Siegen, Germany / Fraunhofer Institute for Applied Information Technology (FIT), Germany*

It's in your Spinal Cord, it's in your Fingertips: Practices of Tools and Craft in Building Software

Jessica Lingel, *Microsoft Research, UK*
Tim Regan, *Microsoft Research, UK*

Drawing on interviews with 12 software engineers, we investigate the relationship between developers and the tools they use to build code through the lens of craft. We analyze different conceptualizations of craft in accounts of software development, including craft as a process of building, craft as materiality, and craft as a community of practice. By working through the different facets of craft as elicited in the specific context of software development, we investigate tensions of perceiving coding work as, on the one hand, highly rational, and on the other, deeply personal and embodied. In working through these tensions of code as abstract and concrete, cerebral and intuitive, we note implications for craft, both as a theory relevant to computer human interaction, and for paradigms of education in computer science.

Cultivating Practice & Shepherding Technology Use: Supporting Appropriation Among Unanticipated Users

Pablo-Alejandro Quinones, *University of Michigan, USA*

Previous work has shown that, potential users are free to interpret technology in any numbers of ways and that the successful appropriation of technology into practice depends heavily on users' understandings and narratives around the technology's use. Who drives the successful appropriation process is still ill-defined within the literature. In this paper, we present a case study conducted in a research university, using interviews to understand staff practices and technology appropriation within their work contexts. We found that the successful appropriation of collaborative IT relies on the invisible work conducted by those people within groups who formally or informally aid their colleagues in the successful 'cultivation' of practices and sensemaking around technology--people we call shepherds. We draw parallels to other work that suggest the need for similar types of agents and close with a dialog concerning the challenge of establishing shepherding practices within large organizations.

Designing for Repair? Infrastructures and Materialities of Breakdown

Daniela K Rosner, *University of Washington, USA*
Morgan Ames, *Stanford University¸ USA*

This paper explores issues that come up in practices of breakage and repair through two projects: the "XO" laptops of One Laptop Per Child in Paraguay and public sites of facilitated repair in California, USA. Collectively drawing on 15 months of ethnographic fieldwork, 156 interviews, and archival research,

we find that breakdown and repair are not processes that designers can effectively script ahead of time; instead, they emerge in everyday practice. These practices are shaped by material, infrastructural, gendered, political, and socioeconomic factors - such as manufacturing limitations, access to repair parts and expertise, and environmental convictions - which designers often did not, and in fact may not have been able to, anticipate. We call the material realities and practices of repair negotiated endurance, which is illustrated by four themes from our findings: the cultural emergence of breakdown, collaborative definitions of worth, the fraught nature of collaborative expertise, and the gendered stakes of repair.

Q&A

Location: Dover AB
Chair: David McDonald, *University of Washington, USA*

Fast, Functional, and Fitting: Expert Response Dynamics and Response Quality in an Online Newcomer Help Forum

Hon Jie Teo, *Virginia Polytechnic Institute and State University, USA*
Aditya Johri, *George Mason University, USA*

Prior work has shown that in online communities a few experts are able to help a large number of help-seekers - whether in Q&A communities or other forms of online forums. How is this efficiency achieved and how useful is this help? We show that expert help-giving can be characterized as: (1) Fast - Most active help-givers gave response promptly and were most responsive during peak activity; (2) Functional - There was little duplication of help-giving effort; and, (3) Fitting - Initial responses were of high quality and reduced the need for further clarifications and corrections and high quality responses were provided earlier in the thread. Examination of differences across experts revealed that the most highly rated group of experts responded to 69% of the questions with a median response time of 16 minutes, twice as fast as other experts. Finally, we developed a taxonomy of help-giving to characterize expert responses as: framing, guiding, or engaged help.

How Social Q&A Sites are Changing Knowledge Sharing in Open Source Software Communities

Bogdan Vasilescu, *Eindhoven University of Technology, Netherlands*
Alexander Serebrenik, *Eindhoven University of Technology, Netherlands*
Prem Devanbu, *University of California, USA*
Vladimir Filkov, *University of California, USA*

Mailing lists have been the preferred means for coordinating development and user support activities in open source software development. With the emergence and popularity growth of social Q&A platforms such as StackExchange, this is beginning to change. Such platforms offer different socio-technical incentives to their participants than mailing lists do, e.g., rich web environments to store and manage content collaboratively, or a place to showcase their expertise more visibly to potential recruiters. However, one of the fundamental

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differences between StackExchange and mailing lists is gamification, i.e., participants compete to obtain reputation points and badges. Using a case study of R, a popular data analysis software, we investigate how mailing list participation has evolved since the launch of StackExchange. We found that mailing list experts are migrating to StackExchange, and their behavior is influenced by gamification: participants active on both are more active and provide faster answers on StackExchange than on the mailing list, suggesting they are motivated by the game.

Collaborative Problem Solving: A Study of MathOverflow

Yla R. Tausczik, *Carnegie Mellon University, USA*
Aniket Kittur, *Carnegie Mellon University, USA*
Robert E Kraut, *Carnegie Mellon University, USA*

The Internet has the potential to accelerate scientific problem solving by engaging a global pool of contributors. However, existing approaches focus on broadcasting problems to many independent solvers. We examine a community for mathematical problem solving - MathOverflow -- in which contributors communicate and collaborate interdependently to solve new mathematical "micro-problems" online. We contribute a simple taxonomy of collaborative acts derived from the system and a quantitative analysis relating collaborative acts to solution quality. Our results indicate that contributions that indirectly critique, reframe, or build on existing contributions are widespread and important to solution quality, but have delayed effects compared to independently created contributions. A better understanding of such collaborative strategies can inform the design of tools to support distributed collaboration on complex problems.

Monday 15:45 – 17:00

Interaction Presentations

Come experience this new element of our technical program! Authors of all posters, demonstrations, and videos have the option to present a brief synopsis of their work. Get an overview of this exciting content as a prelude to the evening's Interaction Reception.

Posters 1
Location: Grand Ballroom 1 & 2

Posters 2
Location: Grand Ballroom 3 & 4

List of Posters

A Visual Interactive Environment for Enhancing Collaboration Between Engineers for the Safety Analysis Mechanisms in Embedded Systems
Ragaad AlTarawneh, *University of Kaiserslautern, Germany*
Jens Bauer, *University of Kaiserslautern, Germany*
Achim Ebert, *University of Kaiserslautern, Germany*

From Implicit to Explicit Knowledge: A Tool for Preserving and Sharing Mental Links in Science

Philipp Andelfinger, *Karlsruhe Institute of Technology (KIT), Germany*
Matthias Keller, *Karlsruhe Institute of Technology (KIT), Germany*
Holger Kühner, *Karlsruhe Institute of Technology (KIT), Germany*
Hannes Hartenstein, *Karlsruhe Institute of Technology (KIT), Germany*

Selfies for Science: Collaborative Configurations Around ScienceKit

Elizabeth Bonsignore, *University of Maryland – College Park, USA*
June Ahn, *University of Maryland – College Park, USA*
Tamara Clegg, *University of Maryland – College Park, USA*
Jason C. Yip, *University of Maryland – College Park, USA*
Daniel Pauw, *University of Maryland – College Park, USA*
Michael Gubbels, *University of Maryland – College Park, USA*
Becky Lewittes, *University of Maryland – College Park, USA*
Emily Rhodes, *University of Maryland – College Park, USA*

Gamifying Citizen Science: A Study of Two User Groups

Anne Bowser, *University of Maryland – College Park, USA*
Derek Hansen, *Brigham Young University, USA*
Jenny Preece, *University of Maryland – College Park, USA*
Yurong He, *University of Maryland – College Park, USA*
Carol Boston, *University of Maryland – College Park, USA*
Jen Hammock, *Smithsonian Institution, USA*

Conceptual Distance Matters When Building on Others' Ideas in Crowd-Collaborative Innovation Platforms

Joel Chan, *University of Pittsburgh, USA*
Steven P. Dow, *Carnegie Mellon University, USA*
Christian Schunn, *University of Pittsburgh, USA*

CSCW in the Healthcare Enterprise: A Knowledge Domain Visualization

Trustin Clear, *Georgia Institute of Technology, USA*
Rahul C. Basole, *Georgia Institute of Technology, USA*

What Motivates Members to Contribute to Enterprise Online Communities?

Kate Ehrlich, *IBM Research, USA*
Michael Muller, *IBM Research, USA*
Tara Matthews, *IBM Research, USA*
Ido Guy, *IBM Research, Israel*
Inbal Ronen, *IBM Research, Israel*

Differences in Technology Use to Support Community Crime Prevention

Sheena L. Erete, *DePaul University, USA*
Ryan Miller, *Northwestern University, USA*
Dan A. Lewis, *Northwestern University, USA*

GeoTagger: A Collaborative and Participatory Environmental Inquiry System

Jerry Alan Fails, *Montclair State University, USA*
Katherine G. Herbert, *Montclair State University, USA*
Emily Hill, *Montclair State University, USA*
Chris Loeschorn, *Montclair State University, USA*
Spencer Kordecki, *Montclair State University, USA*
David Dymko, *Montclair State University, USA*
Andrew DeStefano, *Montclair State University, USA*
Zill Christian, *Montclair State University, USA*

My Friends Are Here! Why Talk to "Strangers"?

Rosta Farzan, *University of Pittsburgh, USA*
Shuguang Han, *University of Pittsburgh, USA*

The Effects of Individualized Feedback on College Students' Contributions to Citizen Science

Yurong He, *University of Maryland – College Park, USA*
Jennifer Preece, *University of Maryland – College Park, USA*
Carol Boston, *University of Maryland – College Park, USA*
Anne Bowser, *University of Maryland – College Park, USA*
Derek Hansen, *Brigham Young University, USA*
Jen Hammock, *Smithsonian Institution, USA*

Open Collaboration Becomes Art: Innovative Pro-bono Participation over Social Media

Jie-Eun Hwang, *University of Seoul, Republic of Korea*

Defining the Price of Hospitality: Networked Hospitality Exchange via Airbnb

Tapio Ikkala, *Helsinki Institute for Information Technology HIIT & Aalto University*, Finland
Airi Lampinen, *Helsinki Institute for Information Technology HIIT & Aalto University*, Finland

Understanding In-situ Social Media Use at Music Festivals

Sue Jamison-Powell, *Independent Researcher*
Lucy Bennett, *Independent Researcher*
Jamie Mahoney, *University of Lincoln, United Kingdom*
Shaun Lawson, *University of Lincoln, United Kingdom*

Collaborative Online Research Platform for Scholars in Humanities

Yuan Jia, *Indiana University, USA*
Xi Niu, *Indiana University, USA*
Reecha Bharali, *Indiana University, USA*
Davide Bolchini, *Indiana University, USA*
André De Tienne, *Indiana University, USA*

Email Inbox Management by Information Overloaded Users

Yoram M. Kalman, *The Open University of Israel, Israel*
Gilad Ravid, *Ben Gurion University of the Negev, Israel*

Values Levers and the Unintended Consequences of Design

Nicolas LaLone, *Pennsylvania State University, USA*

A Study on the Implementation of Large-scale Home Telemonitoring Service

Jane Li, *CSIRO Computing Informatics, Australia*
Leila Alem, *CSIRO Computing Informatics, Australia*
Marlien Varnfield, *CSIRO Computing Informatics, Australia*
Branko Celler, *CSIRO Computing Informatics, Australia*

Now Here or Nowhere: Conflict Resolution Strategies for Intimate Relationship in Diverse Geographical Contexts

Hajin Lim, *Seoul National University, Republic of Korea*
Bongwon Suh, *Seoul National University, Republic of Korea*

NatureNet: A Model for Crowdsourcing the Design of Citizen Science Systems

Mary Lou Maher, *University of North Carolina at Charlotte, USA*
Jenny Preece, *University of Maryland – College Park, USA*
Tom Yeh, *University of Colorado, USA*
Carol Boston, *University of Maryland – College Park, USA*
Kazjon Grace, *University of North Carolina at Charlotte, USA*
Abhijit Pasupuleti, *University of North Carolina at Charlotte, USA*
Abigale Stangl, *University of Colorado, USA*

The Economics of Contribution in a Large Enterprise-scale Wiki

Celeste Lyn Paul, *Department of Defense, USA*
Kris Cook, *Pacific Northwest National Laboratory, USA*
Russ Burtner, *Pacific Northwest National Laboratory, USA*

Crowdsourcing for Grammatical Error Correction

Ellie Pavlick, *University of Pennsylvania, USA*
Rui Yan, *University of Pennsylvania, USA*
Chris Callison-Burch, *University of Pennsylvania, USA*

Information, Sharing and Support in Pregnancy: Addressing Needs for mHealth Design

Tamara Peyton, *The Pennsylvania State University, USA*
Erika Poole, *The Pennsylvania State University, USA*
Madhu Reddy, *The Pennsylvania State University, USA*
Jennifer Kraschnewski, *Penn State Hershey Medical Center, USA*
Cynthia Chuang, *Penn State Hershey Medical Center, USA*

Investigating OSN Users' Privacy Strategies with In-Situ Observation

Andreas Poller, *Fraunhofer Institute for Secure Information Technology, Germany*
Petra Ilyes, *Goethe University, Germany*
Andreas Kramm, *Goethe University, Germany*
Laura Kocksch, *Goethe University, Germany*

Achieve: Evaluating the Impact of Progress Logging and Social Feedback on Goal Achievement

Zachary Porges, *Cornell University, USA*
Xi Yang, *The University of Hong Kong, Hong Kong*
Apurva Desai, *Cornell University, USA*
Catherine Ho, *Cornell University, USA*
Ruwan Pallegedara, *Cornell University, USA*
Raisa Razzaque, *Cornell University, USA*
Dan Cosley, *Cornell University, USA*

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Sensing Stress Network for Social Coping
Mashfiqui Rabbi, *Cornell University, USA*
Syed Ishtiaque Ahmed, *Cornell University, USA*

Does Motivation in Citizen Science Change with Time and Culture?
Dana Rotman, *University of Maryland-College Park, USA*
Jen Hammock, *Smithsonian Institution, USA*
Jenny Preece, *University of Maryland-College Park, USA*
Carol Boston, *University of Maryland-College Park, USA*
Derek Hansen, *Brigham Young University, USA*
Anne Bowser, *University of Maryland-College Park, USA*
Yurong He, *University of Maryland-College Park, USA*

The Properties of Twitter Network Communications among Teenagers
Gili Rusak, *Siena College, USA*

Do Recommendations Matter? News Recommendation in Real Life
Alan Said, *CWI, USA*
Alejandro Bellogín, *CWI, USA*
Jimmy Lin, *University of Maryland-College Park, USA*
Arjen de Vries, *CWI, USA*

DrumGenius: Bridging Learning-Gap with Interactive Musical Instruments
Ye Tao, *Zhejiang University, China*
Guanyun Wang, *Zhejiang University, China*
Yujie Hong, *Zhejiang University, China*
Qi Wang, *Eindhoven University of Technology, The Netherlands*
Cheng Yao, *Zhejiang University, China*
Fangtian Ying, *Zhejiang University, China*

Using Physical Signaling to Support Collaborative Mobile Search
Jaime Teevan, *Microsoft Research, USA*
Meredith Morris, *Microsoft Research, USA*
Shiri Azenkot, *University of Washington, USA*

Designing the Default Privacy Settings for Facebook Applications
Na Wang, *Pennsylvania State University, USA*
Pamela Wisniewski, *Pennsylvania State University, USA*
Heng Xu, *Pennsylvania State University, USA*
Jens Grossklags, *Pennsylvania State University, USA*

How Groups of People Interact with Each Other on Twitter During Academic Conferences
Xidao Wen, *University of Pittsburgh, USA*
Denis Parra, *Pontificia Universidad Católica de Chile, USA*
Christoph Trattner, *Graz University of Technology, Austria*

Documents and Distributed Scientific Collaboration
Matt Willis, *Syracuse University, USA*
Sarika Sharma, *Syracuse University, USA*
Jaime Snyder, *Syracuse University, USA*
Michelle Brown, *Syracuse University, USA*
Carsten Østerlund, *Syracuse University, USA*
Steve Sawyer, *Syracuse University, USA*

Crystallization: How Social Media Facilitates Social Construction of Reality
Donghee Yvette Wohn, *Northwestern University, USA*
Brian J. Bowe, *Michigan State University, USA*

Exploring the Ecosystem of Software Developers on GitHub and Other Platforms
Yu Wu, *Pennsylvania State University, USA*
Jessica Kropczynski, *Pennsylvania State University, USA*
Patrick C. Shih, *Pennsylvania State University, USA*
John M. Carroll, *Pennsylvania State University, USA*

Collaborative Interpretation in Land Change Science Meta-Studies
Alyson L. Young, *UMBC, USA*
Wayne Lutters, *UMBC, USA*

Can You Marry Me? Conceptualizing In-game Marriage as Intimacy-mediated Collaboration
Guo Zhang, *Indiana University Bloomington, USA*

Impression Management through Communication in Online Dating
Doug Zytko, *New Jersey Institute of Technology, USA*
Sukeshini A. Grandhi, *Eastern Connecticut State University, USA*
Quentin Jones, *New Jersey Institute of Technology, USA*

Demonstrations
Location: Grand Ballroom 7 & 8

CommonTies: A Context-Aware Nudge towards Social Interaction
Azza Abouzied, , *NYU Abu Dhabi, United Arab Emirates*
Jay Chen, *NYU Abu Dhabi, United Arab Emirates*

FAST: Forecast and Analytics of Social Media and Traffic
Venkata Rama Kiran Garimella, *Qatar Computing Research Institute, Qatar*
Carlos Castillo, *Qatar Computing Research Institute, Qatar*

Research Strategy Generation: Avoiding Academic 'Animal Farm'
Thomas S. Methven, *Heriot-Watt University Edinburgh, UK*
Stefano Padilla, *Heriot-Watt University Edinburgh, UK*
David W Corne, *Heriot-Watt University Edinburgh, UK*
Mike J. Chantler, *Heriot-Watt University Edinburgh, UK*

Visiting the 'Lie-brary:' Exploring Data Engagement as Participant Incentive
Madeline Smith, *Northwestern University, USA*
Asmaa Aljuhani, *Northwestern University, USA*
Jeremy Birnholtz, *Northwestern University, USA*
Jeff Hancock, *Cornell University, USA*
Lindsay Reynolds, *Cornell University, USA*

TweetDrops: A Visualization To Foster Awareness and Collective Learning of Sustainability
Xiying Wang, *Cornell University, USA*
Dan Cosley, *Cornell University, USA*

CrowdCrit: Crowdsourcing and Aggregating Visual Design Critique
Kurt Luther, *Carnegie Mellon University, USA*
Amy Pavel, *University of California Berkeley, USA*
Wei Wu, *Carnegie Mellon University, USA*
Jari-lee Tolentino, *University of California Irvine, USA*
Maneesh Agrawala, *University of California Berkeley, USA*
Björn Hartmann¸ *University of California Berkeley, USA*
Steven Dow, *Carnegie Mellon University, USA*

SoBot: Facilitating Conversation Using Social Media Data and a Social Agent
Bin Xu, *Cornell University, USA*
Tina Chien-Wen Yuan, *Cornell University, USA*
Susan R. Fussell, *Cornell University, USA*
Dan Cosley, *Cornell University, USA*

USGS iCoast: Crowdsourcing the Analysis of Coastal Change After Hurricane Sandy
Sophia B. Liu, *U.S. Geological Survey, USA*

Interface for Exploring Crowd's Feedback on a Design
Anbang Xu, *University of Illinois, USA*
Brian P. Bailey, *University of Illinois, USA*

A Collaborative Game to Study the Perception of Presence during Virtual Co-location
Dragoş Datcu, *Delft University of Technology, Netherlands*
Stephan G. Lukosch, *Delft University of Technology, Netherlands*
Heide K. Lukosch, *Delft University of Technology, Netherlands*

kARbon: A collaborative MR web application for communication support in construction scenarios
Jonas Etzold, *Fulda University of Applied Sciences, Germany*
Paul Grimm, *Fulda University of Applied Sciences, Germany*
Jörg Schweitzer, *Wiesbaden University of Applied Sciences, Germany*
Ralf Dörner, *Wiesbaden University of Applied Sciences, Germany*

Capturing Quality: Retaining Provenance for Curated Volunteer Monitoring Data
S. Andrew Sheppard, *University of Minnesota, USA*
Andrea Wiggins, *Cornell University, USA*
Loren Terveen, *University of Minnesota, USA*

Video Track Session
Location: Grand Ballroom 9 & 10

Tumblr Fandoms, Community & Culture
Serena Hillman, *Simon Fraser University, USA*
Jason Procyk, *Simon Fraser University, USA*
Carman Neustaedter, *Simon Fraser University, USA*

Shared Geocaching Over Distance with Mobile Video Streaming
Jason Procyk, *Simon Fraser University, USA*
Carman Neustaedter, *Simon Fraser University, USA*
Carolyn Pang, *Simon Fraser University, USA*
Anthony Tang, *Simon Fraser University, USA*
Tejinder K. Judge, *Simon Fraser University, USA*

TalkBetter: Mobile Intervention Service to Support Family-driven Effort for Children with Language Delay
Inseok Hwang, *KAIST (Korea Advanced Institute of Science and Technology), Republic of Korea*
Chungkuk Yoo, *KAIST (Korea Advanced Institute of Science and Technology), Republic of Korea*
Chanyou Hwang, *KAIST (Korea Advanced Institute of Science and Technology), Republic of Korea*
Dongsun Yim, Ewha Womans University, *Republic of Korea*
Youngki Lee, Singapore Management University, Singapore
Chulhong Min, *KAIST (Korea Advanced Institute of Science and Technology), Republic of Korea*
John Kim, *KAIST (Korea Advanced Institute of Science and Technology), Republic of Korea*
Junehwa Song, *KAIST (Korea Advanced Institute of Science and Technology), Republic of Korea*

Photoportals: Shared References in Space and Time
André Kunert, *Bauhaus-Universität Weimar, Germany*
Alexander Kulik, *Bauhaus-Universität Weimar, Germany*
Stephan Beck, *Bauhaus-Universität Weimar, Germany*
Bernd Froehlich, *Bauhaus-Universität Weimar, Germany*

The development and real-world application of FROG, the Fun Robotic Outdoor Guide
Vanessa Evers, *Universidad Pablo de Olavide de Sevilla, Spain*
Nuno Menezes, *Universidad Pablo de Olavide de Sevilla, Spain*
Luis Merino, *Universidad Pablo de Olavide de Sevilla, Spain*
Dariu Gavrila, *Universidad Pablo de Olavide de Sevilla, Spain*
Fernando Nabais, *Universidad Pablo de Olavide de Sevilla, Spain*
Maja Pantic, *Universidad Pablo de Olavide de Sevilla, Spain*
Paulo Alvito, *Universidad Pablo de Olavide de Sevilla, Spain*

Serefind: A Crowd-Powered Search Engine
Pramod K. Verma, *Johns Hopkins University, USA*

The Family Room: A Multi-Camera, Multi-Display Family Media Space
Erick Oduor, *Simon Fraser University, USA*
Carman Neustaedter, *Simon Fraser University, USA*

Monday 17:00 – 19:00

Interaction Reception

Location: Grand Ballroom 5 & 6

Come meet with the authors of work-in-progress posters, interact with demonstrations of innovative new systems, enjoy our video program, and learn about the activities of our doctoral colloquium and workshops. This highly interactive session is an annual highlight of the conference.

Sponsored by Facebook

Monday 19:30 – 22:00

Facebook Reception

Location: Heavy Seas Alehouse (1300 Bank Street)

Please join us at Heavy Seas Alehouse for drinks and fun with fellow CSCW attendees. Beat the Baltimore cold with a beer and stimulating conversation! Chat with qualitative and quantitative research ninjas from Facebook, which is hosting this party for all CSCW attendees who are 21 or older. To attend, please register online (cscw. amc.org > Attend > Conference Receptions) and bring your identification to the party.

Hosted by Facebook

MONDAY

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	Grand Ballroom 1 & 2	Grand Ballroom 3 & 4	Grand Ballroom 5	Grand Ballroom 6	Grand Ballroom 7 & 8	Grand Ballroom 9 & 10	Dover AB
9:00-10:15	Values & Social Norms	Social Media: Online and Off	Panel: Lifestyle Teleworks Speak Out!	Social Media in the Enterprise	Family	Concurrency Control	Group Dynamics
10:15-10:45	Coffee Break (*West Foyer*) *Sponsored by Microsoft Research*						
10:45-12:00	Social Tech & Well-Being	Shopping and Collecting	CSCWhat's Next	Reflective Research	ICT4D	Leadership	Technology & Information Work-ers
12:00-14:00	Lunch (*On your own*)						
14:00-15:15	Romance	Crowds in Crises	Panel: CSCW in Social Media Era	Collaborative Search & Sharing	Supporting Communities	Locations & Maps	Promoting Participation & Engagement
15:15-15:45	Coffee Break (*West Foyer*) *Sponsored by Microsoft Research*						
15:45-16:45	Lasting Impact Award: Jonathan Grudin *(Grand Ballroom 5 & 6)*						
16:45-17:45	Town Hall Meeting *(Grand Ballroom 5 & 6)*						
18:00-19:00	An Evening at the National Aquarium *(National Aquarium, Pier 3 Pavilion (main entrance))*						
19:00-22:00	Conference Reception *(National Aquarium, Pier 4 Pavilion (East entrance))*						

Session with Best Paper Nomination

Session With Best Paper Award

Tuesday 9:00 – 10:15

Panel: Lifestyle Teleworks Speak Out!
Location: Grand Ballroom 5
Coordinator: Gina Venolia, *Microsoft Research, USA*

Tom Erickson, *IBM T.J. Watson Research Center, USA*
John Tang, *Microsoft Research, USA*
Tessa Lau, *Suitable Technologies, USA*
Susan Herring, *Indiana University, USA*

This panel brings together four HCI researchers who are primarily remote workers, in order to discuss their technological solutions, their social practices, and the interplay between their lived experience and formal research into computer-mediated communication. We aim for an engaging, fun, and informative discussion appropriate for researchers interested in remote collaboration and computer-mediated communication.

Social Media in the Enterprise
Location: Grand Ballroom 6
Chair: Jennifer Thom, *IBM Research, USA*

Creepy but Inevitable? The Evolution of Social Networking
Hui Zhang, *University of Washington, USA*
Munmun De Choudhury, *Microsoft Research, USA*
Jonathan Grudin, *Microsoft Research, USA*

The fifth year of a cross-sectional trend study of social networking in a large organization yielded surprises that led to a large-scale interview study. With experience, people found ways to address early challenges, but new concerns have arisen. As social networking companies more visibly embraced the search engine revenue model, behavior tracking and targeted advertising, expressions of concern by users shifted from boundary regulation or context collapse to the ways information is used. At present, the benefits of use seem to outweigh drawbacks.

Understanding Employee Social Media Chatter with Enterprise Social Pulse
N. Sadat Shami, *IBM, USA*
Jiang Yang, *IBM, USA*
Laura Panc, *IBM, USA*
Casey Dugan, *IBM T.J. Watson Research, USA*
Tristan Ratchford, *IBM T.J. Watson Research, USA*
Jamie C Rasmussen, *IBM Research, USA*
Yannick M Assogba, *IBM T.J. Watson Research, USA*
Tal Steier, *IBM Research, Israel*
Todd Soule, *IBM T.J. Watson Research, USA*
Stela Lupushor, *IBM, USA*
Werner Geyer, *IBM T.J. Watson Research, USA*
Ido Guy, *IBM Research, Israel*
Jonathan Ferrar, *IBM, USA*

Social media has the potential to augment traditional surveys in understanding the opinions and sentiment of employees. In this paper, we introduce Enterprise Social Pulse (ESP) - a tool designed to support analysts whose job involves understanding employee chatter. ESP aggregates and analyzes data from internal and external social media sources while respecting employee privacy. It surfaces the data through a user interface that supports organic results and keyword search, data segmentation and filtering, and several analytics and visualization features. An evaluation of ESP was conducted with 19 Human Resources professionals. Results from a survey and interviews with participants revealed the value and willingness to use ESP, but also surfaced challenges around deploying an employee social media listening solution in an organization.

Most Liked, Fewest Friends: Patterns of Enterprise Social Media Use
Gloria Mark, *University of California, Irvine*
Ido Guy, *IBM Research, Israel*
Shiri Kremer-Davidson, *IBM Research, Israel*
Michal Jacovi, *IBM Research, Israel*

Enterprise social media can provide visibility of users' actions and thus has the potential to reveal insights about users in the organization. We mined large-scale social media use in an enterprise to examine: a) user roles with such broad platforms and b) whether people with large social networks are highly regarded. First, a factor analysis revealed that most variance of social media usage is explained by commenting and 'liking' behaviors while other usage can be characterized as patterns of distinct tool usage. These results informed the development of a model showing that online network size interacts with other media usage to predict who is highly assessed in the organization. We discovered that the smaller one's online network size in the organization, the more highly assessed they were by colleagues. We explain this inverse relationship as due to friending behavior being highly visible but not yet valued in the organization.

Values & Social Norms
Location: Grand Ballroom 1 & 2
Chair: Ingrid Erickson, *Rutgers University, USA*

Understanding Individuals' Personal Values from Social Media Word Use
Jilin Chen, *IBM Research, USA*
Gary Hsieh, *University of Washington, USA*
Jalal U Mahmud, *IBM Research, USA*
Jeffrey Nichols, *IBM Research, USA*

The theory of values posits that each person has a set of values, or desirable and trans-situational goals, that motivate their actions. The Basic Human Values, a motivational construct that captures people's values, have been shown to influence a wide range of human behaviors. In this work, we analyze people's values and their word use on Reddit, an online social news sharing community. Through conducting surveys and

analyzing text contributions of 799 Reddit users, we identify and interpret categories of words that are indicative of user's value-orientations. Using the same data, we further report a preliminary exploration on word-based prediction of Basic Human Values.

Cursing in English on Twitter

Wenbo Wang, *Wright State University*, USA
Lu Chen, *Wright State University*, USA
Krishnaprasad Thirunarayan, *Wright State University*, USA
Amit P. Sheth, *Wright State University*, USA

Cursing is not uncommon during conversations in the physical world: 0.5% to 0.7% of all the words we speak are curse words, given that 1% of all the words are first-person plural pronouns (e.g., we, us, our). On social media, people can instantly chat with friends without face-to-face interaction, usually in a more public fashion and broadly disseminated through highly connected social network. Will these distinctive features of social media lead to a change in people's cursing behavior? In this paper, we examine the characteristics of cursing activity on a popular social media platform - Twitter, involving the analysis of 51 million tweets and about 14 million users. In particular, we explore a set of questions that have been recognized as crucial for understanding cursing in offline communications by prior studies, including the ubiquity, utility, and contextual dependencies of cursing.

How to See Values in Social Computing: Methods for Studying Values Dimensions

Katie Shilton, *University of Maryland, USA*
Jes A. Koepfler, *University of Maryland, USA*
Kenneth R. Fleischmann, *University of Texas at Austin, USA*

Human values play an important role in understanding social computing. Research on values in social computing is challenged by disagreement about indicators and objects of study as researchers distribute their focus across contexts of technology design, adoption, and use. This paper draws upon a framework that clarifies how to see values in social computing research by describing values dimensions, comprised of sources and attributes of values in sociotechnical systems. This paper uses the framework to compare how diverse research methods employed in social computing surface values and make them visible to researchers. The framework provides a tool to analyze the strengths and weaknesses of each method for observing values dimensions. By detailing how and where researchers might observe interactions between values and technology design and use, we hope to enable researchers to systematically identify and investigate values in social computing.

Social Media: Online and Off

Location: Grand Ballroom 3 & 4
Chair: Jeffrey Bigham, *Carnegie Mellon University, USA*

De-Virtualizing Social Events: Understanding the Gap between Online and Offline Participation for Event Invitations

Ai-Ju Huang, *National Tsing Hua University*, Taiwan
Hao-Chuan Wang, *National Tsing Hua University*, Taiwan
Chien Wen Yuan, *Cornell University, USA*

One growing use of computer-based communication media is the gathering of people in initiating or sustaining social events. Although the use of computer-mediated communication and social network sites such as Facebook for event promotion is becoming popular, online participation in an event does not always translate to offline attendance. In this paper, we report on an interview study that examines how people handle online event invitations and what influences their online and offline participation. The results show that people's event participation is shaped by their social perceptions of the event's nature (e.g., public or private), their relationships to others (e.g., the strength of their connections to other invitees), and the medium used to communicate event information (e.g., targeted invitation via email or spam communication via Facebook event page). By exploring how people decide whether to participate online or offline, the results illuminate the sophisticated nature of the mechanisms that affect participation and has design implications that can bridge virtual and real attendance.

Awkward Encounters of an "Other" Kind: Collective Self-Presentation and Face Threat on Facebook

Eden Litt, *Northwestern University*, USA
Erin Spottswood, *Cornell University*, USA
Jeremy Birnholtz, *Northwestern University*, USA
Jeff T Hancock, *Cornell University*, USA
Madeline E. Smith, *Cornell University*, USA
Lindsay Reynolds, *Cornell University*, USA

While we tend to think of self-presentation as a process executed by the self, reputation management on social network sites, like Facebook, is increasingly viewed as a collective endeavor. The information users share about one another can have significant impacts on impression formation, and at times this other-generated content may be face threatening, or challenging to one's desired self-presentation. However, we know little about the nature of these other-generated face threats and the ways that people perceive them. Using an online survey of 150 Facebook users, we report on what these users consider to be other-generated face threats and how they feel after experiencing them. Results suggest that many face threats result from other Facebook users neglecting or misunderstanding a target's audience and/or self-presentation goals, as well as a target's fear of creating an unwanted association with another Facebook user. Experience of these threats is affected by both individual and situational attributes. We also report on a new unique measure capturing Facebook skills.

TUESDAY

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You Can't Block People Offline: Examining How Facebook's Affordances Shape the Disclosure Process

Jessica Vitak, *University of Maryland, USA*
Jinyoung Kim, *University of Maryland, USA*

Guided by the underlying question of how--if at all--the self-disclosure process varies online, the present study explores the self-disclosure practices of 26 American graduate students on Facebook through in-depth interviews. Building on work by Derlega and Grzelak [13] on self-disclosure goals and focusing on the affordances of the site, findings reveal both commonalities with and extensions to existing communication research on self-disclosure, as users see both benefits and drawbacks to the high visibility and persistence of content shared through the site. Furthermore, users employed a wide spectrum of strategies to help them achieve their disclosure goals while decreasing perceived risks associated with making disclosures in a public forum. Importantly, these strategies generally sought to recreate the offline boundaries removed by the technical structure of the site and allow users to engage in a more strategic disclosure process with their network.

Family

Location: Grand Ballroom 7 & 8
Chair: A.J. Brush, *Microsoft Research, USA*

Family Matters: Control and Conflict in Online Family History Production

Heather L Willever-Farr, *Drexel University, USA*
Andrea Forte, *Drexel University, USA*

Findagrave.com and Ancestry.com are sites that support the cooperative creation of public historical resources. These sites of cooperative production have attracted tens of thousands and millions of contributors respectively, yet they embrace content standards, social norms, and models of editorial control that differ radically from the well-studied exemplar of Wikipedia. In this study, we investigated how Ancestry.com and Findagrave.com support production of archival resources through analysis of message boards and interviews with participants. We found that these sites are not only places for building a historical resource, but simultaneously serve as opportunities for public memorialization and familial identity construction. Notably, we found that contributors to these websites embrace the idea of familial oversight of biographical information in order to maintain high standards of quality and they harbor a corresponding skepticism of the open editing practices that have become a hallmark of many open collaboration projects.

Our Life is the Farm and Farming is Our Life: Home-Work Coordination in Organic Farm Families

Gilly Leshed, *Cornell University, USA*
Maria Håkansson, *Chalmers University of Technology, Sweden*
Joseph 'Jofish' Kaye, *Yahoo! Research, USA*

We present a qualitative study of 13 farm families who intentionally merge their home and work lives. This is in contrast to most of the families studied in CSCW, who are urban/suburban, white-collar and often dual-income, where the goal is to balance separate spheres of home and work. We analyze these farm families' coordination along three dimensions - space, time, and roles - and then contrast their experiences to what is known in CSCW about families who separate home and work. Through this, we reveal blind spots in CSCW's study of and support for family coordination, and suggest a new approach to building better tools to support such activities. We emphasize the importance of considering co-location rather than assuming geographic distribution across life sphere, the value of natural rhythms in understanding and supporting family life, and show how taking on simultaneous roles can be viewed as a life goal rather than a source of conflict.

Account Sharing in the Context of Networked Hospitality Exchange

Airi M I Lampinen, *Microsoft Research, USA; Helsinki Institute for Information Technology HIT/Aalto University, Finland; University of Helsinki, Finland*

This paper examines account sharing in the context of networked hospitality exchange. I discuss the dynamics of account sharing based on a qualitative interview study with multi-person households who offer to host visitors via Couchsurfing.org. Findings reveal that multi-people households that engage in account sharing face several challenges, including presenting multiple people in one profile, coordinating negotiations over access to domestic space, and representing in a fair way the reputation hosts have accumulated together over time. Amidst the rising rhetoric of a 'reputation economy', this paper calls for engaging the inclusions, exclusions, and inequalities that reputation metrics may renew or create, especially if they fail to acknowledge people's account sharing practices. Furthermore, this paper encourages adopting a design focus beyond individuals in order to cater to maintaining shared accounts and interacting with others through them. The findings have implications for a variety of hospitality exchange services and other online systems.

TUESDAY

Concurrency Control

Location: Grand Ballroom 9 & 10
Chair: Sameer Patil, *University of Helsinki, Finland*

Achieving Convergence in Operational Transformation: Conditions, Mechanisms and Systems

Yi Xu, *Nanyang Technological University*, *Singapore*
Chengzheng Sun, *Nanyang Technological University*, *Singapore*
Mo Li, *Nanyang Technological University*, *Singapore*

In this paper, we present a comprehensive and in-depth study on convergence property preservation and avoidance in Operational Transformation (OT) systems. In this study, we discovered general and special conditions, transformation patterns, and basic mechanisms for avoiding Convergence Property 2 (CP2), and established the CP2-avoidance correctness of seven major OT systems. Furthermore, we proposed improvements to existing systems and designed a new OT system with a combination of novel features, which is unique and nonexistent in any existing system. These results are significant contributions to the advancement of fundament OT knowledge and technology and to collaboration-enabling technology.

Exhaustive Search of Puzzles in Operational Transformation

Chengzheng Sun, *Nanyang Technological University*, *Singapore*
Yi Xu, *Nanyang Technological University*, *Singapore*
Agustina Agustina, *Nanyang Technological University*, *Singapore*

Operational Transformation (OT) is a collaboration-enabling technology and has been a technical research topic in CSCW in over two decades. One main challenge in OT research is detecting and resolving puzzles - subtle and characteristic scenarios in which an OT system may fail. After many years of extensive search and research, various intricate puzzles have been detected and resolved. However, it remains open whether all puzzles have been discovered. To solve this issue, we set out to devise a system of verification frameworks and a software tool, that are independent of specific OT algorithms and able to exhaustively cover all possible transformation cases in which puzzles (if any) will manifest themselves. With the support of these tools, we verified OT correctness and concluded: all puzzles, under basic data and operation models and established transformation properties, have been discovered and resolved. These results are significant as they resolved a number of long-standing OT mysteries and contributed to the advancement of OT fundamental knowledge and technological innovation.

A Partial Replication Approach for Anywhere Anytime Mobile Commenting

Huanhuan Xia, , *Fudan University, China*
Tun Lu, *Fudan University, China*
Bin Shao, *Microsoft Research Asia, China*
Guo Li, *Fudan University, China*
Xianghua Ding, *Fudan University, China*
Ning Gu, *Fudan University, China*

Commenting systems play increasingly important roles in the interactive web applications. Meanwhile, more and more web applications are visited on mobile devices. However, the intermittent connection of mobile networks and resource limitation of mobile devices pose great challenges, mainly in terms of interactive responsiveness and data consistency. In this paper, we present the first work of partial replication solution based on collaborative editing techniques, which can address the issues of local responsiveness and resource limitation on mobile commenting systems. We report how we address the consistency maintenance challenges that come with the partial replication approach. With this approach, users are allowed to smoothly comment anywhere anytime. The comment thread can be incrementally updated and automatically synchronized with strong data consistency guarantees. We implemented a system prototype called Hydra and evaluated it on a real data set.

Group Dynamics

Location: Dover AB
Chair: Les Nelson, *Palo Alto Research Center, Inc., USA*

Monitoring Email to Indicate Project Team Performance and Mutual Attraction

Sean A Munson, *University of Washington, USA*
Karina E Kervin, *University of Michigan, USA*
Lionel P Robert, *University of Michigan, USA*

Many managers and mentors for project teams desire more efficient and more effective ways of monitoring and predicting the quality of social relationships and the performance of teams under their purview. A previous study found that one form of linguistic mimicry, linguistic style matching, and some lexical features indicated team performance and mutual attraction in short-term, laboratory tasks. In this paper, we evaluate whether these measures also work as indicators for performance, shared understanding, and team trust in longer-duration project teams, using only limited, unobtrusively obtained communication traces. In our four-month evaluation using student project team emails, we found no support for LSM or most of the previously identified measures as practical indicators in our field setting. We did find some support for using future-oriented words to predict team performance over time.

TUESDAY

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Editing Beyond Articles: Diversity & Dynamics of Teamwork in Open Collaborations

Jonathan T Morgan, *Wikimedia Foundation, USA*
Michael Gilbert, *University of Washington, USA*
David W McDonald, *University of Washington, USA*
Mark Zachry, *University of Washington, USA*

We report a study of Wikipedia in which we use a mixed-methods approach to understand how participation in specialized workgroups called WikiProjects has changed over the life of the encyclopedia. While previous work has analyzed the work of WikiProjects in supporting the development of articles within particular subject domains, the collaborative role of WikiProjects that do not fit this conventional mold has not been empirically examined. We combine content analysis, interviews and analysis of edit logs to identify and characterize these alternative WikiProjects and the work they do. Our findings suggest that WikiProject participation reflects community concerns and shifts in the community's conception of valued work over the past six years. We discuss implications for other open collaborations that need flexible, adaptable coordination mechanisms to support a range of content creation, curation and community maintenance tasks.

Designing the virtual self: How avatar customization and psychological connections influence group collaboration

Rabindra A Ratan, *Michigan State University, USA*
Béatrice S Hasler, *Interdisciplinary Center Herzliya, Israel*

Virtual environments facilitate group collaboration through avatars. While many studies have examined the effects of avatar attributes on users' behaviors and attitudes, few have explicitly tested how elements of avatar design relate to group collaboration satisfaction. The present study fills this gap using data from a field study with student groups in a collaborative virtual environment. Avatar customization count was found to relate to more satisfaction with group collaboration, as did the extent to which the user expressed personal identity through the avatar. Although other types of connections to avatars were not found to relate to group collaboration satisfaction, they did relate to avatar face similarity, suggesting that these constructs may be important to other elements of avatar use besides group collaboration. These findings also suggest that virtual group collaboration environments could improve satisfaction by encouraging users to customize their avatars, especially to reflect personal identity.

TUESDAY

Tuesday 10:45 - 12:00

CSCWhat's Next

Location: Grand Ballroom 5
Chair: Mark Handel, *The Boeing Company, USA*; Susan Wyche, *Michigan State University, USA*

Coworking: A sociotechnical approach to ameliorating the problems with distributed working
Toni Ferro, *University of Washington, USA*

Counting & Coordinating: How people track their personal finances
Jofish Kaye, *Nokia Research Center, USA*

Schema-mediated idea generation: Innovating with crowds
Lixiu Yu, *Carnegie Mellon University, USA*

Reflective Research

Location: Grand Ballroom 6
Chair: Steve Sawyer, *Syracuse University, USA*

The Kernel of a Research Infrastructure
David Ribes, *Georgetown University, USA*

Infrastructure makes it easier, faster or possible for investigators to study new objects of research. It does so by making available stable resources and services such as data, collaboration tools, sites of sample collection, or calibrated instruments. This paper offers the concept of the kernel of a research infrastructure as a new unit of analysis for investigating the enabling capacities of infrastructure. The kernel is the core resources and services an infrastructure makes available (called the cache), as well as the work, techniques and technologies that go into sustaining that availability (called addressing). By inspecting and comparing the kernel of two long-term scientific enterprises, this paper demonstrates how focusing on the kernel can help explain key qualities of research infrastructure such as flexibility and persistence in the face of dramatic changes to the objects, methods and practice of science.

The Policy Knot: Re-integrating Policy, Practice and Design in CSCW Studies of Social Computing
Steven J Jackson, *Cornell University, USA*
Tarleton Gillespie, *Cornell University, USA*
Sandy Payette, *Cornell University, USA*

In CSCW and information science research today, the worlds of design, practice and policy are often held separate, speaking to different audiences, venues, and fields of expertise. But many growing areas of CSCW work, including mobile, cloud, and social computing, run into problems at precisely this intersection. This paper presents a model for understanding processes of change

and emergence in social computing in which policy, practice, and design show up in the form of complex interdependencies, or knots, which collectively determine the shape, meaning and trajectory of shifting computational forms. We then apply this model to the recent controversy over the location-aware mobile app Girls Around Me, which, when examined with an eye for policy's interaction with design and users, turns out to be a multi-layered issue involving the intentions app designers, the policies of platforms like Foursquare and Facebook. Finally, we examine policy negotiations in the case of Google Buzz and the privacy complaint issued in response by the Federal Trade Commission.

Can Plans and Situated Actions be Replicated?
John Rooksby, *University of Glasgow, UK*

This paper recreates and discusses the study of photocopier use originally presented in Suchman's book Plans and Situated Actions. There are often complaints about the lack of replication studies in disciplines related to CSCW (particularly Software Engineering and HCI). However, these complaints are usually embedded in wider attempts to install a principled scientific method within these disciplines. Plans and Situated Actions was not a scientific text but drew upon naturalistic analysis. This paper argues there has been value in recreating Plans and Situated Actions (specifically in being able to explore laboratory issues unexplored in the original, and in understanding the book as being about more than instruction following). However the paper argues that recreating the study has not and cannot constitute a scientific replication. The paper concludes that recreating studies should not be conflated with replication.

Social Technologies and Well-Being
Location: Grand Ballroom 1 & 2
Chair: Michael Massimi, *Microsoft Research, UK*

Social Structure and Depression in TrevorSpace
Christopher M Homan, *Rochester Institute of Technology, USA*
Naiji Lu, *University of Rochester, USA*
Xin Tu, *University of Rochester, USA*
Megan C Lytle, *University of Rochester, USA*
Vincent MB Silenzio, *University of Rochester, USA*

We discover patterns related to depression in the social graph of an online community of lesbian, gay, and bisexual, transgender, and questioning youth. We conducted a small survey on this community, a social networking service called TrevorSpace, and additionally, obtained snapshots of the entire TrevorSpace social graph. With survey data on fewer than two hundred community members and the network graph of the entire community (which is completely anonymous except for the survey responses), we detected statistically significant correlations between a number of graph properties and those TrevorSpace users showing a higher likelihood of depression, according to the Patient Healthcare Questionnaire-9, a standard instrument for estimating depression. Our results suggest that those who are less depressed are more structurally integrated into the TrevorSpace social graph than those with more depression. Our techniques may apply to other hard-to-reach online communities, like gay men on Facebook or Zoroastrians on Twitter, where obtaining detailed information about individuals is difficult or expensive, but obtaining the social graph is not.

Characterizing and Predicting Postpartum Depression from Shared Facebook Data
Munmun De Choudhury, *Microsoft Research, USA*
Scott Counts, *Microsoft Research, USA*
Eric J Horvitz, *Microsoft Research, USA*
Aaron Hoff, *Microsoft Research, USA*

The birth of a child is a milestone in the life of parents. We leverage Facebook data shared voluntarily by 165 new mothers as streams of evidence for characterizing their postnatal experiences. We consider multiple measures including activity, social capital, emotion, and linguistic style in participants' Facebook data in pre- and postnatal periods. Our study includes detecting and predicting onset of post-partum depression (PPD). The work complements recent work on detecting and predicting significant postpartum changes in behavior, language, and affect from Twitter data. In contrast to prior studies, we gain access to ground truth on postpartum experiences via self-reports and a common psychometric instrument used to evaluate PPD. We develop a series of statistical models to predict from data available before childbirth a mother's likelihood of PPD. We corroborate our quantitative findings through interviews with a sample of the participants. We find that increased social isolation and lowered availability of social capital as manifested on Facebook, are the best predictors of PPD in mothers.

Books as a Social Technology
Annika Hupfeld, *The University of Nottingham, UK*
Tom A Rodden, *The University of Nottingham, UK*

E-books are becoming ubiquitous. Whether or not they will eventually replace books or merely complement them, there is a concern that something important might be lost in moving from print to digital books. While there is a wealth of research into the challenges and opportunities of e-reading, there is little research aiming to understand the broader role of books in everyday life. Rather than speculating on what books are in the digital age, in this paper, we wish to ask what books do. To do so, we conducted a series of in-depth interviews with ten UK households to understand everyday uses of books. Our findings suggest that books are not merely reading technologies but a resource for everyday social and personal engagements. We discuss implications of re-framing books as social technologies for the design of e-books.

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Shopping and Collecting

Location: Grand Ballroom 3 & 4
Chair: Moira Burke, *Facebook, Inc., USA*

Framing the Conversation: The Role of Facebook Conversations in Shopping for Eyeglasses

Karim Said, *University of Maryland, USA*
Michele Annmarie Burton, *University of Maryland, USA*
Amy Hurst, *University of Maryland, USA*
Shaun K Kane, *University of Maryland, USA*

Individuals often leverage their social network to receive feedback from their peers about various decisions. Capitalizing on this trend, fashion retailers, such as the eyeglass frame retailer Warby Parker, have instituted "home try-on" programs and encourage customers to share pictures of their experiences online with their social networks prior to making a purchase decision. In this paper, we investigate Warby Parker's Facebook page and explore the ways people formulate questions and conversations as they shop for new frames. Our research presents insights derived from a dataset of over 29,000 Warby Parker Facebook page posts, consisting of photos, comments, and "likes". Using statistical analyses, and qualitative coding techniques, we explore trends of and motivations for conversations on the Warby Parker Facebook page. We show that contributors produce a broad range of content, from artistically edited photo collages and self-portraits to simple "likes" and one-to-three word comments, and in doing so leverage the Warby Parker Facebook page as a platform for creative self-expression, and socially driven decision-making.

Remote Shopping Advice: Enhancing In-Store Shopping with Social Technologies

Meredith Ringel Morris, *Microsoft Research, USA*
Kori Inkpen, *Microsoft Research, USA*
Gina Venolia, *Microsoft Research, USA*

Consumers shopping in "brick-and-mortar" (non-virtual) stores often use their mobile phones to consult with others about potential purchases. Via a survey (n = 200), we detail current practices in seeking remote shopping advice. We then consider how emerging social platforms, such as social networking sites and crowd labor markets, could offer rich next-generation remote shopping advice experiences. We conducted a field experiment in which shoppers shared photographs of potential purchases via MMS, Facebook, and Mechanical Turk. Paid crowdsourcing, in particular, proved surprisingly useful and influential as a means of augmenting in-store shopping. Based on our findings, we offer design suggestions for next-generation remote shopping advice systems.

Specialization, Homophily, and Gender in a Social Curation Site: Findings from Pinterest

Shuo Chang, *University of Minnesota, USA*
Vikas Kumar, *University of Minnesota, USA*
Eric Gilbert, *Georgia Institute of Technology, USA*
Loren G Terveen, *Georgia Institute of Technology, USA*

Pinterest is a popular social curation site where people collect, organize, and share pictures of items. We studied two fundamental issues for such sites: flow of information (via repinning) and patterns of activity that attract followers. We organized our studies around two key factors: the extent to which users specialize in particular topics, and homophily among users. We also considered the existence of differences between female and male users. We found: (a) women and men differed in the types of content they collected and the degree to which they specialized; male Pinterest users were not particularly interested in stereotypically male topics; (b) sharing diverse types of content increases your following, but only up to a certain point; (c) homophily drives repinning: people repin content from other users who share their interests; homophily also affects following, but to a lesser extent. Our findings suggest strategies both for users (e.g., strategies to attract an audience) and maintainers (e.g., content recommendation methods) of social curation sites.

ICT4D

Location: Grand Ballroom 7 & 8
Chair: Susan Wyche, *Michigan State University, USA*

Making IT "Pay a Bit Better"- Design Challenges for Micro Rural Enterprise

Andy Crabtree, *The University of Nottingham, UK*
Alan Chamberlain, *The University of Nottingham, UK*

This paper reports on a field study of small market in Wales undertaken as part of broader research project aimed at developing IT solutions to support rural enterprise. The project is predicated on the assumption that the primary challenge facing rural enterprise is that of scale and that IT solutions could and should add value by enabling growth. The study suggests that many rural enterprises are micro in character, that they are not driven by the need to grow, and that value is and can be added in different ways that reflect the social values oriented to and employed by micro businesses and their consumers. The paper elaborates vernacular understandings of supply chains and their coordination, along with business and consumer motivations to consider alternative possibilities for design that place emphasis on making micro rural enterprise 'pay a bit better' rather than scaling it up.

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The Role of Data in Aligning the 'Unique Identity' Infrastructure in India

Aditya Johri, *George Mason University, USA*
Janaki Srinivasan, *Virginia Polytechnic Institute and State University, USA*

We present findings from a qualitative field study of a national e-infrastructure project currently underway in India. We study how this large and complex infrastructure for issuing unique biometric-based identification numbers to the 1.2 billion residents of India was aligned across various stakeholders engaged in the project. We find that the focus on 'data' kept the entire infrastructure together and working. However, this narrow focus also made the design team view the people applying for IDs as numbers whose management could be standardized. In reality, the infrastructure encountered people with differing experiences and expectations of state-issued IDs, expectations that had to be managed by agents on the ground. With our focus on the nation state as a site for studying e-infrastructure, we extend the domains in which CSCW research takes place and contribute to the theory of infrastructure building in a context where state-citizen relations are at stake.

Enriching the Distressing Reality: Social Media Use by Chinese Migrant Workers

Jingjing Liu, *University of Siegen, Germany*
Alexander Boden, *University of Siegen, Germany*
David William Randall, *University of Siegen, Germany*
Volker Wulf, *University of Siegen, Germany*

Based on a field study in Guangdong Province, this paper describes the social media use of Chinese migrant workers in the manufacturing sector. It was found that social media plays a significant role in the lives of young workers who have left their rural hometowns in early adulthood and struggle to survive in the urban centers. They buy expensive IT devices to gain a social reputation, as social media provides opportunities for self-expression; strengthens their self-consciousness; and to a certain extent, influences their world view. For most of the workers in our study, social media has become a very important part of leisure time and entertainment. Moreover, the life in virtual worlds provides them a psychological compensation mechanism to temporarily avoid the pressure of their daily lives.

Leadership

Location: Grand Ballroom 9 & 10
Chair: Gilly Leshed, *Cornell University, USA*

The Role of Founders in Building Online Groups

Robert E Kraut, *Carnegie Mellon University, USA*
Andrew T Fiore, *Facebook, Inc., USA*

As a class, online groups are popular, but many die before they become successful. This research traced the fate of 472,231 new online groups. By the end of a 3-month observation period, 57% of the groups had died, ceasing to post new content. Founders' human and social capital before the group was formed, the decisions they made when they created the group and their behavior in the group during its first week all predicted group survival. Many of the results suggest that founders create more successful groups if they have more resources (e.g., more online friends) and opportunities for acquiring relevant skills (e.g., more experience with online groups) and are more active in their group. However, founders who are too controlling seem to present a threat their groups. Their groups are more likely to fail if they are the only group administrator, if they have ties to all group members and if they added everyone to the group.

The Communication Patterns of Technical Leaders: Impact on Product Development Team Performance

Kate Ehrlich, *IBM, USA*
Marcelo Cataldo, *ConnReperio, LLC, USA*

Leaders are important for the smooth functioning of teams but their effect on team performance is less well established. Based on a sample of 55 software development teams from two companies we examined the association between technical leaders' communication structure and the team's performance. Consistent with past research, we found that a team's productivity and quality improve when the team communication follows hierarchical and small-world patterns, respectively. However, there was significant additional improvement in both productivity and quality when technical leaders shared more information than they gathered, and when they were more central in the communication network. Surprisingly they were not necessarily the most "central" individuals in the team's communication structure. We discuss the implication of these results for new tools that provide feedback to leaders and the team.

Ensemble: Exploring Complementary Strengths of Leaders and Crowds in Creative Collaboration

Joy Kim, *Stanford University, USA*
Justin Cheng, *Stanford University, USA*
Michael S Bernstein, *Stanford University, USA*

In story writing, the diverse perspectives of the crowd could support an author's search for the perfect character, setting, or plot. However, structuring crowd collaboration is challenging. Too little structure leads to unfocused, sprawling narratives, and too much structure stifles creativity. Motivated by the idea that individual creative leaders and the crowd have complementary creative strengths, we present an approach where a leader directs the high-level vision for a story and articulates creative constraints for the crowd. This approach is embodied in Ensemble, a novel collaborative story-writing platform. In a month-long short story competition, over one hundred volunteer users on the web started over fifty short stories using Ensemble. Leaders used the platform to direct collaborator work by establishing creative goals, and collaborators contributed meaningful, high-level ideas to stories through specific suggestions. This work suggests that asymmetric creative contributions may support a broad new class of creative collaborations.

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Technology and Information Workers

Location: Dover AB
Chair: Morten Fjeld, *Chalmers University of Technology¸ Sweden*

The Perception of Others: Inferring Reputation from Social Media in the Enterprise

Michal Jacovi, *IBM Research¸ Israel*
Ido Guy, *IBM Research¸ Israel*
Shiri Kremer-Davidson, *IBM Research¸ Israel*
Sara Porat, *IBM Research¸ Israel*
Netta Aizenbud-Reshef, *IBM Research¸ Israel*

The emergence of social media allows people to interact with others all over the world. During interaction, people leave many traces behind that can reveal things about themselves, or about how they perceive others: having many followers may indicate that one is an influencer; forum answers that gain high ranking, are likely to testify for expertise; people who gain high ranking in eCommerce sites are likely to be trustworthy. In this paper, we examine whether public online traces can be used for inferring the reputation of a person as perceived by others in relation to trustworthiness, influence, expertise, and impact. We describe a study performed on indicators of reputation that employees leave in a rich organizational social media platform. We compare different indicators, and report the results of an extensive user study with over 500 participants who provided their perception of thousands of others through a set of hypothetical scenarios.

Supporting Task Resumption Using Visual Feedback

Yikun Liu, *Indiana University Bloomington, USA*
Yuan Jia, *Indiana University at Indianapolis,* USA
Wei Pan, *Indiana University Bloomington, USA*
Mark S Pfaff, *Indiana University Bloomington, USA*

For information workers, maintaining high productivity relies on timely task resumption after interruptions, which are frequent. However, people's task resumption ability is compromised by disruptive environments and human cognitive limitations. We propose that a helpful intervention is to provide visual feedback about the duration of a suspended task. Results from a controlled study show significantly shorter resumption time by adding visual feedback. Further, using emotionally attachable visual objects in the visualization has the additional benefit of decreasing resumption time without increasing stress. Punishment-oriented persuasion strategies produced faster resumption, but also caused higher stress levels. Combined with other related results, we discuss the implications for design as well directions for future study.

Geographical and Organizational Distances in Enterprise Crowdfunding

Michael Muller, *IBM T.J. Watson Research, USA*
Werner Geyer, *IBM T.J. Watson Research, USA*
Todd Soule, *IBM Research, USA*
John Wafer, *IBM, Ireland*

We analyze enterprise crowdfunding as a series of opportunities for voluntary or unplanned collaborations. In an enterprise crowdfunding experiment, we study the influence of interpersonal attributes-in-common on collaborations. Using ideas from Homophily Theory and Social Identity Theory, we analyze the concept of attributes-in-common in terms of multiple identity facets: of geography, of formal corporate structure, working groups/teams, and of formal organizational structure. We combine quantitative and self-report data to show how each type of identity facet has an influence on the likelihood of voluntary collaborations, and we show their "superadditive" combination. We propose new questions for theory, and we consider how our results can lead to new features and technologies to enhance voluntary collaborations in organizations.

Tuesday 14:00 – 15:15

Panel: Computational Social Science: CSCW in the Social Media Era

Location: Grand Ballroom 5
Coordinators: Munmun De Choudhury, *Microsoft Research, USA*; Eric Gilbert, *Georgia Institute of Technology, USA*

Scott Counts, *Microsoft Research, USA*
Munmun De Choudhury, *Microsoft Research, USA*
Jana Diesner, *University of Illinois, USA*
Eric Gilbert, *Georgia Institute of Technology, USA*
Marta C. Gonzalez, *Massachusetts Institute of Technology, USA*
Brian Keegan, *Northeastern University, USA*
Mor Naaman, *Cornell Tech, USA*
Hanna Wallach, *University of Massachusetts, USA*

Collaborative Search and Sharing

Location: Grand Ballroom 6
Chair: Ed Chi, *Google, Inc., USA*

Teammate Inaccuracy Blindness: When Information Sharing Tools Hinder Collaborative Analysis

Ruogu Kang, *Carnegie Mellon University, USA*
Aimee Kane, *Duquesne University, USA*
Sara Kiesler, *Carnegie Mellon University, USA*

Asynchronous collaborative analysis is important in many fields, but information sharing can be a bottleneck. Tools for annotating, organizing, and summarizing information can help, but their value will likely depend on the accuracy of teammates' information. To document this claim, two experiments examined participants' performance on a complex detective task when

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they asynchronously received information from a teammate in a collaboration tool or received no such information. We found that receiving a progress report containing accurate information was associated with improved performance (vs. no information shared in a tool) but worse performance when the information was inaccurate. Teammates were evaluated as helpful even when they were not. Our findings point to a phenomenon of teammate inaccuracy blindness that arises when teammates provide inaccurate information. We propose some strategies for helping collaborators avoid or lessen this effect.

Collaborative Web Search in Context: A Study of Tool Use in Everyday Tasks

Ryan Kelly, *University of Bath, UK*
Stephen J Payne, *University of Bath, UK*

Recent research efforts have led to the creation of a number of systems that provide specialised support for collaborative web search. However, the use of these tools has not been studied outside of the laboratory, and as collaborative search becomes increasingly commonplace in everyday life, there is a need to understand whether the support provided by collaborative search systems fits with real-world information seeking practices. In the present study, we deployed two collaborative search tools to pairs of searchers with genuine information needs. We report findings from in-depth interviews conducted after searchers had used their assigned system for an extended period of time. Our findings show how system features were used and appropriated in pursuit of collaboration, throwing light on the way in which collaborative search is conducted in quotidian settings. Theoretical and practical implications of the results are discussed.

Modeling Search Processes using Hidden States in Collaborative Exploratory Web Search

Zhen Yue, *University of Pittsburgh, USA*
Shuguang Han, *University of Pittsburgh, USA*
Daqing He, *University of Pittsburgh, USA*

It has been rare to investigate search processes that involve complex interactions, such as collaborative search process. Previous approaches of applying individual search process models directly into collaborative setting have also be identified as problematic. In this paper, we proposed an innovative approach to model collaborative search process using Hidden Markov Model (HMM), which is an automatic technique for analyzing temporal sequential data. Obtained through a user study, the data used in this paper consist of two different tasks in both collaborative exploratory Web search and individual exploratory Web search conditions. Our results show that the identified hidden patterns of search process through HMM are compatible with previous well-known models. Besides, HMM has the benefit of providing more details than previous models. It generates richer and more detailed information on search process, which was demonstrated in our study to be useful for analyzing task differences and the correlation of search process with search performance.

Romance

Location: Grand Ballroom 1 & 2
Chair: Vanessa Evers, *University of Twente, Netherlands*

Romantic Partnerships and the Dispersion of Social Ties: A Network Analysis of Relationship Status on Facebook

Lars Backstrom, *Facebook, Inc., USA*
Jon Kleinberg, *Cornell University, USA*

A crucial task in the analysis of on-line social-networking systems is to identify important people --- those linked by strong social ties --- within an individual's network neighborhood, Here we investigate this question for a particular category of strong ties, those involving spouses or romantic partners. We organize our analysis around a basic question: given all the connections among a person's friends, can you recognize his or her romantic partner from the network structure alone? Using data from a large sample of Facebook users, we find this task can be accomplished with high accuracy, but doing so requires the development of a new measure of tie strength that we term `dispersion' --- the extent to which two people's mutual friends are not themselves well-connected. The results offer methods for identifying particular types of structurally significant people in on-line applications, and suggest a potential expansion of existing theories of tie strength.

Facebook Makes the Heart Grow Fonder: Relationship Maintenance Strategies Among Geographically Dispersed and Communication-Restricted Connections

Jessica Vitak, *University of Maryland, USA*

The evolution of information and communication technologies--and their increasing ubiquity in our daily lives--has dramatically impacted interpersonal communication and relationship maintenance processes. These technologies remove temporal and spatial constraints, enabling communication at a distance for low to no physical costs. Research has established that technologies such as email supplement other forms of communication in maintaining relationships, but to what extent do newer technologies--that contain a unique set of affordances--facilitate these processes? Furthermore, do SNS users engage in different practices through the site and obtain different relational benefits based on specific characteristics of the tie? Findings from a survey of adult Facebook users (N=415) indicates that geographically distant Facebook Friends, as well as those who rely on the site as their primary form of communication, engage in relationship maintenance strategies through the site to a greater extent and perceive the site to have a more positive impact on the quality of their relationship.

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Real, but Glossy: Technology and the Practical Pursuit of Magic in Modern Weddings

Michael Massimi, *Microsoft Research, UK*
Richard Harper, *Microsoft Research, UK*
Abigail J Sellen, *Microsoft Research, UK*

Planning a wedding is arguably one of the most complicated collaborative tasks people ever undertake. Despite the commonplace use of technologies in "wedding work," little research has looked at this from an HCI perspective. Based on an interview study, we illustrate how technology is used to deliver the sought-after fantasy and a practical, yet entertaining, affair. We identify four ways that technology helps people do this: (a) by allowing much of the practical planning work to become "invisible;" (b) by easing navigation through the delicate rules of family configurations made manifest in the guest list; (c) by helping create a spectacle-like event that adroitly balances excess and realism; and (d) by documenting the wedding in ways that allows re-experiencing the magic after the event. The paper concludes by discussing the implications of this pursuit on social graphs, place, and photography, contributing to the literature on technology and major life events.

Crowds in Crises

Location: Grand Ballroom 3 & 4
Chair: Edward Cutrell, *Microsoft Research, India*

Digital Mobilization in Disaster Response: The Work & Self-Organization of On-Line Pet Advocates in Response to Hurricane Sandy

Joanne I. White, *University of Colorado, USA*
Leysia Palen, *University of Colorado, USA*
Kenneth M. Anderson, *University of Colorado, USA*

This ethnographic study of a Facebook Page founded on 28 October 2012 in anticipation of Hurricane Sandy's US landfall reveals how on-line pet advocates--a large but loosely organized social movement--mobilized their ad hoc discretionary activities to more cooperative, organized work to assist numerous displaced pets. The investigation shows how innovations around "crossposting" to create a more persistent form of visual data management were important. It describes how these innnovations produced an improvised case management system around which members of the pet-advocacy crowd could collectively work to help displaced pets. The paper connects to the CSCW and organizational science literature to consider how this emergent community articulated work and structured the mission of the Page.

Collaboration Surrounding Beacon Use During Companion Avalanche Rescue

Audrey Desjardins, *Simon Fraser University, Canada*
Carman Neustaedter, *Simon Fraser University, Canada*
Saul Greenberg, *University of Calgary, Canada*
Ron Wakkary, *Simon Fraser University, Canada*

When facing an avalanche, backcountry skiers need to work effectively both individually and as a group to rescue buried victims. If they don't, death is likely. One of the tools used by each person is a digital beacon that transmits an electromagnetic signal. If buried, others use their beacons to locate victims by searching for their signals, and then dig them out. This study focuses on the collaborative practices of avalanche rescue and the interactions with beacons while backcountry skiing. We conducted interviews with backcountry recreationists and experts, and we observed avalanche rescue practice scenarios. Our results highlight aspects and challenges of mental representation, trust, distributed cognition, and practice. Implications include three considerations for the redesign of beacons: simplicity, visibility and practice.

Designing for the Deluge: Understanding & Supporting the Distributed, Collaborative Work of Crisis Volunteers

Camille Cobb, *University of Washington, USA*
Ted McCarthy, *University of Washington, USA*
Annuska Perkins, *University of Washington, USA*
Ankitha Bharadwaj, *University of Washington, USA*
Jared Comis, *University of Washington, USA*
Brian Do, *University of Washington, USA*
Kate Starbird, *University of Washington, USA*

Social media are a potentially valuable source of situational awareness information during crisis events. Consistently, "digital volunteers" and others are coming together to filter and process this data into usable resources, often coordinating their work within distributed online groups. However, current tools and practices are frequently unable to keep up with the speed and volume of incoming data during large events. Through contextual interviews with emergency response professionals and digital volunteers, this research examines the ad hoc, collaborative practices that have emerged to help process this data and outlines strategies for supporting and leveraging these efforts in future designs. We argue for solutions that align with current group values, work practices, volunteer motivations, and organizational structures, but also allow these groups to increase the scale and efficiency of their operations.

Supporting Communities

Location: Grand Ballroom 7 & 8
Chair: Wendy Kellogg, *IBM Research, USA*

Beyond End User Content to Collaborative Knowledge Mapping: Interrelations Among Community Social Tools

Tara Matthews, *IBM Research, USA*
Steve Whittaker, *University of California at Santa Cruz, USA*
Hernan Badenes, *IBM, Argentina*
Barton Smith, *IBM Research, USA*

Most studies of social tools examine usage of each tool in isolation. Instead, we explore how online communities (a) combine multiple social tools, and (b) use social tools together with external tools. Based on interviews with community leaders and quantitative analysis of 128 online community spaces, we explored the combined use of six social software tools--wikis, blogs, forums, social bookmarks, social file repositories, and task-

management tools. Our contributions involve characterizing combined technology use by communities and adding to our understanding of online community behaviors: Communities combine social tools to create complex information spaces. When combined, each tool is used for restricted 'core' functions. Thus, "social" features are not always leveraged for every tool. Our results suggest that an important overlooked aspect of social media concerns how these different tools can be effectively combined. While most prior work on communities emphasizes end user content, we identify additional important design activities where community leaders curate and combine pre-existing content from multiple tools to serve their community needs.

Think Globally, Act Locally: A Case Study of a Free Food Sharing Community and Social Networking

Eva Ganglbauer, *Vienna University of Technology, Austria*
Geraldine Fitzpatrick, *Vienna University of Technology, Austria*
Ozge Subasi, *Vienna University of Technology, Austria*
Florian Güldenpfennig, *Vienna University of Technology, Austria*

Social networking has a long history of supporting communities online. In this paper we are concerned with a specific community that has formed around free food sharing to save food from being wasted. Specifically, Foodsharing.de is a platform that enables consumers, farmers, organizations and retailers to offer and collect food. Associated with this is the Foodsharing Facebook group where broader community discussions take place. We report on a qualitative analysis of the Foodsharing Facebook group to understand its role in emerging and sustaining the community. The Facebook group is a place where the individual values and motives, socio-political discussions and mass media interrelate and create new social patterns through narratives and local community building. We present our findings as interplay between individual, community, organisational levels, public relations and media, the operational platform Foodsharing.de that enables local communities and the Facebook group where global ideological framing of the community takes place.

From Rookie to All-Star: Professional Development in a Graphic Design Social Networking Site

Jennifer Marlow, *Carnegie Mellon University, USA*
Laura Dabbish, *Carnegie Mellon University, USA*

A plethora of domain-focused social networking sites have emerged and have the potential to change the nature of work as we know it. These sites are dedicated to specific professional activities and are being used both for learning and gaining employment. Little work to date has examined how individuals use social network functionality for professional development in these types of communities. We present a qualitative investigation into how SNS functionality supports two important components of professional activity: skill development and reputation building. We focus on activity within Dribbble, a social network site for graphic designers. Through a series of interviews with novice and experienced Dribbble users who work within and outside of traditional organizations, we identified ways they leverage SNS features for learning and skill

development. We find that benefits of the site are dependent on extensive social capital development activities in order to garner attention for posted work. Our results inform the design of online social settings for professional development.

Locations and Maps

Location: Grand Ballroom 9 & 10
Chair: Louise Barkhuus, *Stockholm University, Sweden*

Mind the Map: The Impact of Culture and Economic Affluence on Crowd-Mapping Behaviours

Giovanni Quattrone, *University College London, UK*
Afra Mashhadi, *Alcatel-Lucent, Ireland*
Licia Capra, *University College London, UK*

Crowd-mapping is a form of collaborative work that empowers citizens to collect and share geographic knowledge. OpenStreetMap (OSM) is a successful example of such paradigm, where the goal of building and maintaining an accurate global map of the changing world is being accomplished by means of local contributions. While OSM has been subject to many country-specific studies, the relationship between national culture and economic affluence and users' participation has been so far unexplored. In this work, we systematically study the link between them: we characterise OSM users in terms of who they are, how they contribute, during what period of time, and across what geographic areas. We find strong correlations between these characteristics and national culture factors (e.g., power distance, individualism, pace of life, self expression), and well as Gross Domestic Product per capita. Based on these findings, we discuss design issues that developers of crowd-mapping services should consider to account for cross-cultural differences.

Aesthetic Capital: What Makes London Look Beautiful, Quiet, and Happy?

Daniele Quercia, *Yahoo! Research, Spain*
Neil Keith O'Hare, *Yahoo! Research, Spain*
Henriette Cramer, *Yahoo! Labs, USA*

In the 1960s, Kevin Lynch's "The Image of the City" explored what impression US city neighborhoods left on its inhabitants. Till now, however, the scale of urban perception studies has been considerably constrained by the quantity of experimental subjects used. That is why we have been working on a crowdsourcing project that can help us find out what it is about the look of a particular neighborhood that makes it appear to be beautiful, quiet, and happy. We collect votes from more than 3K individuals and translate them into quantitative measures of urban perception (i.e., of aesthetic capital). By then using state-of-the-art image processing techniques, we determine the visual cues that make a place appear beautiful, quiet, and happy. The amount of greenery is the most positively associated visual cue with each of three qualities; by contrast, broad streets, fortress-like buildings, and council houses tend to be negatively associated.

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Leveraging the Contributory Potential of User Feedback

Mikhil Masli, *IBM, USA*
Loren G Terveen, *University of Minnesota, USA*

Under contribution is an important problem in online social production communities: important tasks don't get done, and only a small minority of participants are active contributors. How can we remedy this situation? We explore the feasibility of using the act of consuming information as a gateway to contributing information; specifically, we investigate semi-automated means to extract useful information from standard types of user feedback. We explore this approach in the context of a geographic wiki and route-planning system for bicyclists. We analyzed naturally occurring textual route feedback, finding that the feedback was rich in information such as bikeability ratings, tags and notes that are useful to improve the system's route finding and navigational assistance capabilities. We also present a technique to extract such information by engaging users in dialogue immediately after they obtain a route. We believe that our results and ideas are applicable to a broad class of social production systems.

Promoting Participation and Engagement

Location: Dover AB
Chair: Mark Handel, *The Boeing Company, USA*

A Comparison of Social, Learning, and Financial Strategies on Crowd Engagement and Output Quality

Lixiu Yu, *Carnegie Mellon University, USA*
Paul André, *Carnegie Mellon University, USA*
Aniket Kittur, *Carnegie Mellon University, USA*
Robert E Kraut, *Carnegie Mellon University, USA*

A significant challenge for crowdsourcing approaches has been increasing worker engagement and output quality. We explore the effects of social, learning, and financial strategies, and their combinations, on increasing worker retention across tasks and change in the quality of worker output. Through three experiments, we show that 1) using these strategies together increased workers' engagement and the quality of their work; 2) a social strategy was most effective for increasing engagement; 3) a learning strategy was most effective in improving quality. The findings of this paper provide strategies for harnessing the crowd to perform complex tasks, as well as insight into crowd workers' motivation.

Motivating Contribution in a Participatory Sensing System via Quid-Pro-Quo

Anthony Tomasic, *Carnegie Mellon University, USA*
John Zimmerman, *Carnegie Mellon University, USA*
Aaron Steinfeld, *Carnegie Mellon University, USA*
Yun Huang, *Carnegie Mellon University, USA*

Participatory sensing systems (PSS) require frequent injection of information that has a short shelf-life. The use of crowds to gather information for PSS is therefore particularly challenging. In this study, we explore the impact of two policies on user contributions. A quid-pro-quo policy exchanges contributions from users for access to critical information in the system. A request policy simply reminds the user that information is needed to make the system function well. Prior research has shown that in these policies are effective in non-PSS systems. During a large-scale experimental study within a publicly deployed, crowdsourced, transit information system, we analyzed these policies over a 10- month period. Our results confirmed that quid-pro-quo led to more contribution, but at a cost of faster departure from the study. Simply asking for contributions largely ineffective and was statistically indistinguishable to the control condition. Thus crowdsource system designers should consider imposing quid-pro-quo type policies for PSS that concentrate on fewer users, but makes them more productive.

Crowd Synthesis: Extracting Categories and Clusters from Complex Data

Paul André, *Carnegie Mellon University, USA*
Aniket Kittur, *Carnegie Mellon University, USA*
Steven P Dow, *Carnegie Mellon University, USA*

Analysts synthesize complex, qualitative data to uncover themes and concepts, but the process is time-consuming, cognitively taxing, and automated techniques show mixed success. Crowdsourcing could help this process through on-demand harnessing of flexible and powerful human cognition, but incurs other challenges including limited attention and expertise. Further, text data can be complex, high-dimensional, and ill-structured. We address two major challenges unsolved in prior crowd clustering work: scaffolding expertise for novice crowd workers, and creating consistent and accurate categories when each worker only sees a small portion of the data. To address these challenges we present an empirical study of a two-stage approach to enable crowds to create an accurate and useful overview of a dataset: A) we draw on cognitive theory to assess how re-representing data can shorten and focus on salient dimensions; and B) introduce an iterative clustering approach that provides workers a global overview of data. We demonstrate a classification-plus-context approach elicits the most accurate categories at the most useful level of abstraction.

TUESDAY

Tuesday   15:45 - 16:45

Lasting Impact: Lasting Impact Award: Jonathan Grudin
Location: Grand Ballroom 5 & 6
Moderator: Irene Greif

Why CSCW Applications Fail: Problems in the Design and Evaluation of Organizational Interfaces (1988)
Jonathan Grudin

This is the inaugural year for the CSCW Lasting Impact Award to recognize a paper published at the CSCW conference at least 10 years prior that has been extremely influential since its publication. After a public call for nominations, the award winner was determined by the Lasting Impact Award Committee, which consists of volunteers from the past CSCW Papers Chairs. This year's winner is Jonathan Grudin, who is being recognized in a special panel session.

Tuesday   16:45 – 17:45

Town Hall Meeting
Location: Grand Ballroom 5 & 6

The CSCW Town Hall Meeting is a time dedicated for the SIGCHI CSCW Community steering committee to interact with attendees of CSCW 2014, harnessing their interests, and addressing their concerns about future directions of the CSCW conference series.

Tuesday   18:00 – 19:00

An Evening at the National Aquarium
Location: National Aquarium, Pier 3 Pavilion (main entrance)

Join us for a one-hour private walk through of the five levels of central exhibits in one of the Nation's most spectacular aquariums. Now in its 33rd year of operation, this architectural focal point of the Inner Harbor is home to 17,000 water-loving creatures. Don't miss this "must see" stop on any visit to Charm City.

Tuesday   19:00 – 22:00

Conference Reception
Location: National Aquarium, Pier 4 Pavilion (east entrance)
An evening of dinner, drinks, and high-energy networking in the heart of the Aquarium's Pier 4 Pavilion. The Atrium provides two stories of social space with plenty of conversation nooks. Two adjoining exhibits will remain open during the reception: "Dolphin Discovery," the residential complex for the Aquarium's dolphin community, and "Jellies Invasion: Oceans Out of Balance," a mesmerizing exhibit showcasing different species of jellyfish.

TUESDAY

WEDNESDAY

Time	Grand Ballroom 1 & 2	Grand Ballroom 3 & 4	Grand Ballroom 5	Grand Ballroom 6	Grand Ballroom 7 & 8	Grand Ballroom 9 &10	Dover AB
9:00–10:15	Identifying Opportunities for Collaboration		Panel: The Ethos and Pragmatics of Data Sharing	Building on Others	The Office	Collaborative Software Development	Mobile Apps for Enhancing Connectedness
10:15–10:45	Coffee Break (West Foyer)						
10:45–12:00	Mobilizing for Action	Volunteering and Doing Good	Panel: Facebook in the Developing World	MOOCs	Parents & Children	Civic Participation	Gaming
12:00–14:00	Lunch (On your own)						
14:00–15:15	Social Media & Politics	Crowdsourcing Complexity	Panel: Making Cultures	Multiple Dimensions & Displays	Personal Health Management	Geographic Distance	Distributed Teams
15:15–15:45	Coffee Break (West Foyer)						
15:45–17:15	Closing Plenary & Keynote: Patrick Meier (Grand Ballroom 5 & 6)						

Session with Best Paper Nomination

Session With Best Paper Award

Wednesday   9:00 – 10:15

Panel: The Ethos and Pragmatics of Data Sharing

Location: Grand Ballroom 5
Coordinator: Ingrid Erickson, *Rutgers University, USA*

Sean Goggins, *University of Missouri, USA*
Libby Hemphill, *Illinois Institute of Technology, USA*
Kalpana Shankar, *University College Dublin, Ireland*
Kristin Eschenfelder, *University of Wisconsin, USA*
Katie Shilton, *University of Maryland, USA*
Steve Sawyer, *Syracuse University, USA*

The focus of this panel is the pragmatics of data sharing as framed by the needs and pressures of scholarly work. Panelists represent a lively blend of quantitative, qualitative and mixed methods researchers with recent experiences in developing and sharing data. Panelists will present research and address questions related to data collection and management, human subjects protocols, data archival and data repositories and other emergent issues.

Building on Others

Location: Grand Ballroom 6
Chair: Steven Dow, *Carnegie Mellon University, USA*

Standing on the Schemas of Giants: Socially Augmented Information Foraging

Aniket Kittur, *Carnegie Mellon University, USA*
Andrew M Peters, *Carnegie Mellon University, USA*
Abdigani Diriye, *Carnegie Mellon University, USA*
Michael Bove, *Carnegie Mellon University, USA*

People spend an enormous amount of time searching for complex information online; for example, consumers researching new purchases or patients learning about their conditions. As they search, people build up rich mental schemas about their target domains; which, if effectively shared, could accelerate learning for others with similar interests. In this paper we introduce a novel approach for integrating the schemas individuals develop as they gather information online and surfacing them for others with similar interests. Through a controlled experiment we show that having access to the others' schemas while foraging for information helps new users to induce more useful, prototypical, and better-structured schemas than gathering information alone.

The Antecedents of Remix

Giorgos Cheliotis, *National University of Singapore, Singapore*
Nan Hu, *University of Wisconsin, USA*
Jude Yew, *National University of Singapore, Singapore*
Jianhui Huang, *Singapore Management University, Singapore*

Reuse of the works of others has become common practice on the Internet and has formed the basis for collaboration in some online communities. However, some works are reused much more frequently than others. In this article, we build a causal model that explains which factors are most salient in determining the likelihood that an author's work will be reused. Controlling for common factors, such as the work's popularity, we show that the probability of reuse depends on (a) the degree of derivativity of the work in question, (b) the specific ways in which it derives meaning from other works (intertextuality), (c) the audience's preferential attachment to authors of high fecundity, and (d) the author's social embededness in networks of reuse. We use trace data from an online community that was built for the purpose of demonstrating the ability of open sharing and reuse to spur collaboration and innovation in music.

Remixers' Understandings of Fair Use Online

Casey Fiesler, *Georgia Institute of Technology, USA*
Amy S Bruckman, *Georgia Institute of Technology, USA*

How do online content creators make decisions about copyright law? In the course of day-to-day online activities, Internet users are forced to make subtle judgments about one of the most confusing and nuanced areas of law, copyright and fair use. In this study, we conducted semi-structured interviews with eleven content creators who participate in remix and fan creation activities online, to try to probe their legal understandings and attitudes. We found that social norms that emerge among these content creators do not always track to what the law actually says, but are often guided more by ethical concerns. Our participants showed surprisingly similar patterns of understandings and confusions, impacting technology use and interaction online.

Identifying Opportunities for Collaboration

Location: Grand Ballroom 3 & 4
Chair: Jeremy Birnholtz, *Northwestern University, USA*

Unsupervised Classification and Visualization of Unstructured Text for the Support of Interdisciplinary Collaboration

Lisa J Miller, *University of Hawaii at Manoa, USA*
Rich Gazan, *University of Hawaii at Manoa, USA*
Susanne Still, *University of Hawaii at Manoa, USA*

We present a computer supported tool for cooperative work in interdisciplinary fields, which we applied to and tested within the area of astrobiology. Our document classification and visualization system is fully automated and data driven, based on unsupervised machine learning algorithms that

make minimal assumptions about the data, and network visualization tools. It can extract information about collaborations from unstructured databases with no meta-data. A new feature selection algorithm was created that gives an indication how many words should be used in word-count based cluster analysis. We used our method to analyze a body of publications that were produced by researchers from NASA's Astrobiology Institute. Our analysis shows the utility of our method by revealing structure that can aid the planning of collaborative research. We presented this analysis as a cultural probe, and recorded reactions from researchers that clearly indicated the success of our method in aiding interdisciplinary research by helping scientists from different disciplines to work together.

Pair Research: Matching People for Collaboration, Learning, and Productivity
Robert C. Miller, *Massachusetts Institute of Technology, USA*
Haoqi Zhang, *Northwestern University, USA*
Eric Gilbert, *Georgia Institute of Technology, USA*
Elizabeth Gerber, *Northwestern University, USA*

To increase productivity, informal learning, and collaborations within and across research groups, we have been experimenting with a new kind of interaction that we call pair research, in which members are paired up weekly to work together on each other's projects. In this paper, we present a system for making pairings and present results from two deployments. Results show that members used pair research in a wide variety of ways including pair programming, user testing, brainstorming, and data collection and analysis. Pair research helped members get things done and share their expertise with others.

Supporting Group Interactions in Museum Visiting
Peter D Tolmie, *The University of Nottingham, UK*
Steve Benford, *The University of Nottingham, UK*
Chris Greenhalgh, *The University of Nottingham, UK*
Tom Rodden, *The University of Nottingham, UK*
Stuart Reeves, *The University of Nottingham, UK*

Ethnographic study in two contrasting museums highlights a widespread but rarely documented challenge for CSCW design. Visitors' engagement with exhibits often ends prematurely due to the need to keep up with or attend to fellow group members. We unpack the mechanics of these kinds of phenomena revealing how the behaviours of summoning, pressurizing, herding, sidelining, and rounding up, lead to the responses of following, skimming and digging in. We show how the problem is especially challenging where young children are involved. As an initial prompt we explore two ways in which CSCW could help address this challenge: enabling a more fluid association between information and exhibits; and helping reconfigure the social nature of visiting.

The Office
Location: Grand Ballroom 7 & 8
Chair: Melissa Mazmanian, *University of California, Irvine, USA*

Trustworthy By Design
Bran Knowles, *Lancaster University, UK*
Mike Harding, *Lancaster University, UK*
Lynne Blair, *Lancaster University, UK*
Nigel Davies, *Lancaster University, UK*
James Hannon, *InTouch Ltd., UK*
Mark Rouncefield, *Lancaster University, UK*
John Walden, *InTouch Ltd., UK*

Driven by changes in working practices and technology trends, organizations are increasingly reliant on mobile work- ers and the data they capture. However, while significant work has been carried out on increasing the usability of mobile devices and applications, little attention has been paid to the quality of data captured by mobile workers. If this data is inaccurate or untrustworthy, serious consequences can ensue. In this paper we study a system targeted at mobile workers in the highways sector that is deliberately designed to increase the accuracy and trustworthiness of the data collected. The resulting Inspections application has been very positively received by workers and we present lessons that we believe can be applied to other applications of this type.

Tracking Serendipitous Interactions: How Individual Cultures Shape the Office
Chloe Brown, *University of Cambridge, UK*
Christos Efstratiou, *University of Cambridge, UK*
Ilias Leontiadis, *Telefonica Research, Spain*
Daniele Quercia, *Yahoo! Research, Spain*
Cecilia Mascolo, *University of Cambridge, UK*

In many creative work environments, serendipitous interactions between members of different groups may lead to enhanced productivity, collaboration and knowledge dissemination. Two factors that may have an influence on such interactions are cultural differences between individuals in highly multicultural workplaces, and the layout and physical spaces of the workplace itself. In this work, we investigate how these two factors may facilitate or hinder inter-group interactions in the workplace. We analyze traces collected using wearable electronic badges to capture face-to-face interactions and mobility patterns of employees in a research laboratory in the UK. We observe that those who interact with people of different roles tend to come from collectivist cultures that value relationships and where people tend to be comfortable with social hierarchies, and that some locations in particular are more likely to host serendipitous interactions, knowledge that could be used by organizations to enhance communication and productivity.

Capturing the Mood: Facebook and Face-to-Face Encounters in the Workplace

Gloria Mark, *University of California, Irvine, USA*
Shamsi T Iqbal, *Microsoft Research, USA*
Mary P. Czerwinski, *Microsoft Research, USA*
Paul Johns, *Microsoft Research, USA*

What makes people happy, engaged and feeling challenged at work? We conducted an in situ study of Facebook and face-to-face interactions examining how they influence people's mood in the workplace. Thirty-two participants in an organization were each observed for five days in their natural work environment using automated data capture and self-report measures. Our results show that online and offline social interactions are associated with different mood experiences, suggesting that they serve different purposes at work. Face-to-face interactions are associated with a happy mood throughout the day whereas Facebook use and being engaged in work contribute to an overall positive feeling at the end of the day. Email use is associated with negative affect and along with multi-tasking, it is associated with a feeling of engagement and challenge throughout the day. This is the first study that examined how offline and online social interactions influence mood in the workplace.

Collaborative Software Development

Location: Grand Ballroom 9 & 10
Chair: Jim Herbsleb, *Carnegie Mellon University, USA*

Social Influences on Secure Development Tool Adoption: Why Security Tools Spread

Shundan Xiao, *North Carolina State University, USA*
Jim Witschey, *North Carolina State University, USA*
Emerson Murphy-Hill, *North Carolina State University, USA*

Security tools can help developers build more secure software systems by helping developers detect or fix security vulnerabilities in source code. However, developers do not always use these tools. In this paper, we investigate a number of social factors that impact developers' adoption decisions, based on a multidisciplinary field of research called diffusion of innovations. We conducted 42 one-on-one interviews with professional software developers, and our results suggest a number of ways in which security tool adoption depends on developers' social environments and on the channels through which information about tools is communicated. For example, we found that some participants trusted developers with strong reputations on the Internet as much as they trust their colleagues for information about security tools.

Figure Out How to Code with the Hands of Others: Recognizing Cultural Blind Spots in Global Software Development

Stina Matthiesen, *IT University of Copenhagen, Denmark*
Pernille Bjorn, *IT University of Copenhagen, Denmark*
Lise Moller Petersen, *IT University of Copenhagen, Denmark*

We report on an ethnographic study of an outsourcing global software development (GSD) setup between an Indian IT vendor and an IT development division of a Danish bank. We investigate how the local IT development work is shaped by the global setup in GSD and argue that the bank had cultural blind spots toward the changes in Denmark. Three critical issues were neglected due to the cultural blind spots: 1) increased number of interruptions, 2) lack of translucence of remote colleagues' work, and 3) the re-definition of boundaries between work and articulation work. The implications of these findings include considerations for how to organize GSD practices and prepare the organizational changes that occur when moving from a co-located software development organization to an inter-organizational geographically distributed organization. Also our findings open up discussions about the professional identity of IT developers within GSD, which includes extending the qualifications for IT developers.

Articulation Spaces: Bridging the Gap between Formal and Informal Coordination

Alexander Boden, *Fraunhofer Institute for Applied Information Technology (FIT), Germany*
Frank Rosswog, *University of Siegen, Germany*
Gunnar Stevens, *University of Siegen, Germany*
Volker Wulf, *University of Siegen, Germany*

The high complexity of knowledge-intensive work such as software development makes it beneficial to have spaces for formal and informal articulation work. Existing information systems (IS) tend to treat these different aspects of coordination separately, resulting in problems of awareness and coordination. In this paper, we present the concept of Articulation Spaces which combines aspects of Coordination Mechanisms and Common Information Spaces (CIS) in order to provide a room for mediating between the formal and informal aspects of coordination. Based on a design study in the form of a lightweight public display, we test the concept in a medium-sized German software company with regard to its implications for coordination support and show how Articulation Spaces provide information for meta-coordination, raise awareness and facilitate serendipitous knowledge exchange. Our findings provide insights into the design of CIS for flexible and coordination-intensive contexts such as software development work.

WEDNESDAY

MobileAppsforEnhancingConnectedness

Location: Dover AB
Chair: Paul Aoki, *Google.org, USA*

Everyday Dwelling with WhatsApp

Kenton P O'Hara, *Microsoft Research, UK*
Michael Massimi, *Microsoft Research, UK*
Richard Harper, *Microsoft Research, UK*
Simon Rubens, *new experience limited, UK*
Jessica Morris, *new experience limited, UK*

In this paper, we present a study of WhatsApp, an instant messaging smartphone application. Through our interviews with participants, we situate its use within the web of our other connections, both real and virtual. Drawing on Ingold's notion of Dwelling, we discuss how use of WhatsApp is constitutive of our felt life of being together with those close by. We focus on the relationship "doings" in WhatsApp and how this togetherness and intimacy are enacted through small, continuous traces of narrative, of tellings and tidbits, noticings and thoughts, shared images and lingering pauses. Further we discuss how an intimate knowing of others in these relationships, through past encounters and knowledge of coming together in the future, pertain to the particular forms of relationship engagements manifest through the possibilities presented in WhatsApp.

Enhancing Community Awareness of and Participation in Local Heritage with a Mobile Application

Kyungsik Han, *The Pennsylvania State University, USA*
Patrick C Shih, *The Pennsylvania State University, USA*
Mary Beth Rosson, *The Pennsylvania State University, USA*
John M Carroll, *The Pennsylvania State University, USA*

One goal of local communities is to create and reinforce community identity by connecting residents to their local heritage. Technologies have enabled and facilitated the creation and consumption of digitized history content provided by official history institutions as well as individuals. Although much research has been conducted to understand technical and social aspects of digital cultural heritage, little empirical research has investigated how people perceive, experience, and interact with community content that is socially generated and tied to locations, particularly with respect to building community heritage. To address this, we developed a mobile application called LSC (anonymized) and conducted a user study with 34 participants. The study results indicate that meaningful historic places evoked special attention from the participants, and that those who have lived in the community longer tended to contribute more to the community heritage effort. Participants utilized social features as a way of learning local history, reflecting personal experiences and stories, and co-creating rich layers of local history information from their perspectives.

GEMS: The Design and Evaluation of a Location-Based Storytelling Game

Jason Procyk, *Simon Fraser University, Canada*
Carman Neustaedter, *Simon Fraser University, Canada*

It is now possible to capture geotagged photos and videos and share them with family and friends. Yet the reality is that applications for capturing and viewing this information are not particularly rich offering little more than maps and simple textual information about a location. Given this, we wanted to explore this design space to find new and exciting ways for people to document and share their experiences. We designed a location-based game called GEMS to support storytelling amongst family members and close friends. The game narrative and mechanics prompt players to reflect on meaningful places from their past and create geolocated digital memory. Other players can then visit the locations to collect and view the records. A user study revealed that location can provide a rich foundation for storytelling activities. We learned that location-based storytelling strategies often elicit a sense of discovery through exploration, sharing, and conscious reflection.

Wednesday   10:45 – 12:00

Panel: Facebook in the Developing World: The Myths and Realities Underlying a Socially Networked World

Location: Grand Ballroom 5
Coordinator: Susan P. Wyche, *Michigan State University, USA*

Cliff Lampe, *University of Michigan, USA*
Nimmi Rangaswamy, *Indian Institute of Technology Hyderabad, India*
Anicia Peters, Iowa State *University and Polytechnic of Namibia, Namibia*
Andrés Monroy-Hernández, *Microsoft Research, USA*
Judd Antin, *Facebook, USA*

The BBC, New York Times and other media channels are abuzz with reports about Mark Zuckerberg's desire to connect everyone on the planet through social media. Missing from the excitement online articles are reports of the realities "bottom of the pyramid" users in developing countries encounter when trying to access Facebook. This panel brings together researchers who have studied use of the popular social media site in Kenya, Namibia, Zambia, India, Mexico and the United States to discuss the opportunities and challenges that come with adding 4 billion new users to Facebook.

WEDNESDAY

MOOCs
Location: Grand Ballroom 6
Chair: Anne Marie Piper, *Northwestern University, USA*

VidWiki: Enabling the Crowd to Improve the Legibility of Online Educational Videos

Andrew Cross, *Microsoft Research India, India*
Mydhili Bayyapunedi, *Microsoft Research India, India*
Dilip Ravindran, *Microsoft Research India, India*
Edward Cutrell, *Microsoft Research India, India*
William Thies, *Microsoft Research India, India*

Videos are becoming an increasingly popular medium for communicating information, especially for online education. While text-based information platforms like Wikipedia have benefitted enormously from crowdsourced contributions for the creation and improvement of content, the various limitations of video hinder the collaborative editing and improvement of educational videos. To address this issue, we present VidWiki, an online platform that enables students to iteratively improve the presentation quality and content of educational videos. Through the platform, users can improve the legibility of handwriting, correct errors, or translate text in videos by overlaying typeset content such as text, shapes, equations, or images. We conducted a small user study in which 13 novice users annotated and revised Khan Academy videos. Our results suggest that with only a small investment of time on the part of viewers, it may be possible to make meaningful improvements in online educational videos.

Should Your MOOC Forum Use a Reputation System?

Derrick Coetzee, *University of California, Berkeley, USA*
Armando Fox, *University of California, Berkeley, USA*
Marti A. Hearst, *University of California, Berkeley, USA*
Björn Hartmann, *University of California, Berkeley, USA*

Massive open online courses (MOOCs) rely primarily on discussion forums for interaction among students. We investigate how forum design affects student activity and learning outcomes through a field experiment with 1101 participants on the edX platform. We introduce a reputation system, which gives students points for making useful posts. We show that, as in other settings, use of forums in MOOCs is correlated with better grades and higher retention. Reputation systems additionally produce faster response times and larger numbers of responses per post, as well as differences in how students ask questions. However, reputation systems have no significant impact on grades, retention, or the students' subjective sense of community. This suggests that forums are essential for MOOCs, and reputation systems can improve the forum experience, but other techniques are needed to improve student outcomes and community formation. We also contribute a set of guidelines for running field experiments on MOOCs.

Tochi: Peer and Self Assessment in Massive Online Classes

Chinmay Kulkarni, *Stanford University, USA*
Koh Pang Wei, *Stanford University, USA / Coursera, Inc., USA*
Huy Le, *Coursera, Inc., USA*
Daniel Chia, *Stanford University, USA / Coursera, Inc., USA*
Kathryn Papadopoulos, *Stanford University, USA*
Justin Cheng, *Stanford University, USA*
Daphne Koller, *Stanford University, USA / Coursera, Inc., USA*
Scott Klemmer, *Stanford University, USA*

Peer and self assessment offer an opportunity to scale assessment and learning to global classrooms. This paper reports our experiences with two iterations of the first large online class to use peer and self assessment. In this class, peer grades correlated highly with staff-assigned grade. The second iteration had 42.9% of studentsï¿½ grades within 5% of the staff grade, and 65.5% within 10%. On average, students assessed their work 7% higher than staff did. Students rated peersï¿½ work from their own country 3.6% higher. We found that giving students feedback about their grading bias increased subsequent accuracy. We introduce short, customizable feedback snippets that cover common issues with assignments, providing students more qualitative peer feedback. Finally, we introduce a data-driven approach that highlights high-variance rubric items---rubrics using parallel sentence structure, unambiguous wording and well-specified dimensions have lower variance. After revising rubrics, median grading error decreased from 12.4% to 9.9%.

Mobilizing for Action
Location: Grand Ballroom 1 & 2
Chair: Ido Guy, *IBM Research, Israel*

Integrating On-demand Fact-checking with Public Dialogue

Travis Kriplean, *University of Washington, USA*
Caitlin Bonnar, *University of Washington, USA*
Alan Borning, *University of Washington, USA*
Bo Kinney, *Seattle Public Library, USA*
Brian Gill, *Seattle Public Library, USA*

Public dialogue plays a key role in democratic society. Such dialogue often contains factual claims, but participants and readers are left wondering what to believe, particularly when contributions to such dialogue come from a broad spectrum of the public. We explore the design space for introducing authoritative information into public dialogue, with the goal of supporting constructive rather than confrontational discourse. We also present a specific design and realization of an archetypal socio-technical system of this kind, namely an on-demand fact-checking service integrated into a crowdsourced voters guide powered by deliberating citizens. The fact-checking service was co-designed with and staffed by professional librarians. Our evaluation examines the service from the perspectives of both users and librarians.

WEDNESDAY

Tweet Acts: How Constituents Lobby Congress via Twitter

Libby Hemphill, *Illinois Institute of Technology, USA*
Andrew J Roback, *Illinois Institute of Technology, USA*

Twitter is increasingly becoming a medium through which constituents can lobby their elected representatives in Congress about issues that matter to them. Past research has focused on how citizens communicate with each other or how members of Congress (MOCs) use social media in general; our research examines how citizens communicate with MOCs. We contribute to existing literature through the careful examination of hundreds of citizen-authored tweets and the development of a categorization scheme to describe common strategies of lobbying on Twitter. Our findings show that contrary to past research that assumed citizens used Twitter to merely shout out their opinions on issues, citizens utilize a variety of sophisticated techniques to impact political outcomes.

Catalyst: Using Activation Thresholds to Trigger Collective Action

Justin Cheng, *Stanford University, USA*
Michael Bernstein, *Stanford University, USA*

The web is a catalyst for drawing people together around shared goals, but many groups never reach critical mass. It can thus be risky to commit effort to a goal: participants arrive only to discover that nobody else came, and organizers devote significant effort to causes that never get off the ground. Crowdfunding lessens this risk by only calling in donations when an effort reaches a collective goal. However, it leaves unsolved the harder problem of mobilizing time and effort. We generalize the concept into activation thresholds, commitments that are conditioned on others' participation: supporters only need to show up if enough other people commit as well. We present Catalyst, which introduces activation thresholds for on-demand events. For complex coordination needs, Catalyst also includes thresholds for time and role. Catalyst users have organized events including volunteering, on-demand study groups, and mass participation events like a human chess game. Our results suggest that activation thresholds can indeed catalyze a large class of new collective efforts.

Volunteering and Doing Good

Location: Grand Ballroom 3 & 4
Chair: Aniket Kittur, *Carnegie Mellon University, USA*

Competing or Aiming to be Average? Normification as a Means of Engaging Digital Volunteers

Chris Preist, *University of Bristol, UK*
Elaine Massung, *University of Bristol, UK*
David Coyle, *University of Bristol, UK*

Engagement, motivation and active contribution by digital volunteers are key requirements for crowdsourcing and citizen science projects. Many systems use competitive elements, for example point scoring and leaderboards, to achieve these ends. However, while competition may motivate some people, it can have a neutral or demotivating effect on others. In this paper we explore theories of personal and social norms and investigate normification as an alternative approach to engagement, to be used alongside or instead of competitive strategies. We provide a systematic review of existing crowdsourcing and citizen science literature and categorise the ways that theories of norms have been incorporated to date. We then present qualitative interview data from a pro-environmental crowdsourcing study, Close the Door, which reveals normalising attitudes in certain participants. We assess how this links with competitive behaviour and participant performance. Based on our findings and analysis of norm theories, we consider the implications for designers wishing to use normification as an engagement strategy in crowdsourcing and citizen science systems.

Capturing Quality: Retaining Provenance for Curated Volunteer Monitoring Data

S. Andrew Sheppard, *University of Minnesota, USA*
Andrea Wiggins¸ *Cornell University, USA*
Loren Terveen, *University of Minnesota, USA*

The "real world" nature of field-based citizen science involves unique data management challenges that distinguish it from projects that involve only Internet-mediated activities. In particular, many data contribution and review practices are often accomplished "offline" via paper or general-purpose software like Excel. This can lead to integration challenges when attempting to implement project-specific ICT with full revision and provenance tracking. In this work, we explore some of the current challenges and opportunities in implementing ICT for managing citizen science data. Our two main contributions are: a general outline of the workflow tasks common to field-based data collection, and a novel data model for preserving provenance metadata that allows for ongoing data exchange between disparate technical systems and participant skill levels. We conclude with applications for other domains, such as professional monitoring and crisis informatics, as well as directions for future research.

Understanding Factors of Successful Engagement around Energy Consumption between and Among Households

Tawanna R Dillahunt, *University of Michigan, USA*
Jennifer Mankoff, *Carnegie Mellon University, USA*

An increasing number of researchers are using social engagement techniques such as neighborhood comparison and competition to encourage energy conservation, yet community reception and experience with such systems have not been well studied. We also find that researchers have not thoroughly investigated how different households use these systems and how their uses differ from one another. We explore these questions in a 4-10 month field deployment of a social-energy monitoring application across 15 households, in two distinct locations. We contribute results that describe conditions under which these techniques were effective and ineffective. Our results imply that

understanding factors such as a building, or community's layout, context knowledge of community members, accountability and adherence to social norms, trust, and length of residence are key for future design of social-energy applications.

Parents and Children
Location: Grand Ballroom 7 & 8
Chair: Svetlana Yarosh, *AT&T Research Labs, USA*

Adolescent Online Safety: The "Moral" of the Story
Pamela J Wisniewski, *The Pennsylvania State University, USA*
Heng Xu, *The Pennsylvania State University, USA*
Mary Beth Rosson, *The Pennsylvania State University, USA*
John M Carroll, *The Pennsylvania State University, USA*

Adolescence is characterized by heightened risk-taking and independence from parents; these tendencies seem to be magnified by the opportunities afforded through online interactions. Drawing on Kohlberg's Cognitive Moral Development (CMD) theory, we conduct a qualitative study of 12 parent-adolescent dyads that examines the interplay between parenting behaviors and adolescent moral development. We show an association between adolescent moral judgment and online behavior, and we illustrate how parenting style and mediation strategies influence the teen's moral growth and decision making about online behaviors. We also note that parental mediation strategies are moderated by parents' digital literacy: reduced digital literacy is associated with more restrictive or indulgent strategies; while more digitally competent parents are more likely to monitor and mediate their teen's behaviors as they engage online. We also found that experience, not restriction, facilitates the teen's moral growth.

Social Networking Site Use by Mothers of Young Children
Meredith Ringel Morris, *Microsoft Research, USA*

In this paper, we present the first formal study of how mothers of young children (aged three and under) use social networking sites, particularly Facebook and Twitter, including mothers' perceptions of which SNSes are appropriate for sharing information about their children, changes in post style and frequency after birth, and the volume and nature of child-related content shared in these venues. Our findings have implications for improving the utility and usability of SNS tools for mothers of young children, as well as for creating and improving sociotechnical systems related to maternal and child health.

TalkBetter: Family-driven Mobile Intervention Care for Children with Language Delay: A Smartphone-supported In-situ Intervention Approach
Inseok Hwang, *KAIST (Korea Advanced Institute of Science and Technology), Republic of Korea*
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Language delay is a developmental problem of children who do not acquire language as expected for their chronological ages. Without timely intervention, language delay can act as a lifelong risk factor, which includes a learning disorder, a social skill deficit, and a low socioeconomic status. Speech-language pathologists have highlighted that effective parent participation in everyday parent-child conversation is important to treat children's language delay. For effective roles, however, parents need to alter their own lifelong-established conversation habits, requiring extensive period of conscious effort and staying alert. In this paper, we present new opportunities for mobile and social computing to reinforce everyday parent-child conversation with therapeutic implications for children with language delays. Specifically, we propose TalkBetter, a mobile in-situ intervention service to help parents in daily parent-child conversations through real-time meta-linguistic analysis of ongoing conversations. Through extensive field studies with speech-language pathologists and parents, we report the multilateral motivations and implications of TalkBetter. We present our development of TalkBetter prototype and report its performance evaluation.

Civic Participation
Location: Grand Ballroom 9 & 10
Chair: Andres Monroy-Hernandez, *Microsoft Research, USA*

Giving is Caring: Understanding Donation Behavior through Email
Yelena Mejova, *Yahoo! Research, Spain*
Venkata RK Garimella, *Qatar Computing Research Institute, Qatar*
Ingmar Weber, *Qatar Computing Research Institute, Qatar*
Michael C Dougal, *University of California, Berkeley, USA*

Every day, thousands of people make donations to humanitarian, political, environmental, and other causes, a large amount of which occur on the Internet. In this paper, we describe a comprehensive large-scale data-driven study of donation behavior. We analyze a two-month anonymized email log from several perspectives motivated by past studies

on charitable giving: demographics, user interest, external time-related factors and social network influence. We show that email captures the demographic peculiarities of different interest groups, for instance, predicting demographic distributions found in US 2012 Presidential Election exit polls. Furthermore, we find that people respond to major national events, as well as to solicitations with special promotions, and that social connections are the most important factor in predicting donation behavior. Specifically, we identify trends not only for individual charities and campaigns, but also for high-level categories such as political campaigns, medical illnesses, and humanitarian relief. Thus, we show the extent to which large-scale email datasets reveal human donation behavior, and explore the limitations of such analysis.

Civic Action Brokering Platforms: Facilitating Local Engagement with ACTion Alexandria

Derek L Hansen, *Brigham Young University, USA*
Jes A. Koepfler, *University of Maryland, USA / Intuitive Company, USA*
Paul T Jaeger, *University of Maryland, USA*
John C Bertot, *University of Maryland, USA*
Tracy Viselli, *Brookings Institution, USA*

Local communities are turning to new online systems to help motivate and coordinate local volunteerism and problem solving. Inspired by the American barn raising tradition, ACTion Alexandria is designed to help local residents and service-oriented organizations collectively take action to address pressing local needs. This paper introduces "civic action brokering" as a new theoretical concept and frames it within a year-long evaluation of ACTion Alexandria. A mixed-method, case study approach was used to understand how social practices, roles, and technologies helped or hindered successful action brokering. Successes were attributed to a competent community manager, institutional support from an existing nonprofit brokering agency, effective use of social media, a synergistic partnership with nonprofits that helped grow each group's donor network, and emphasis on promoting immediate actions and soliciting ideas for Community Challenges among residents and nonprofit organizations.

MyPosition: Sparking Civic Discourse by a Public Interactive Poll Visualization

Nina Valkanova, *Telekom Innovation Laboratories, Germany / Music Technology Group, Spain*
Robert Walter, *Telekom Innovation Laboratories, Germany*
Andrew Vande Moere, *KU Leuven - University of Leuven, Belgium*
Jörg Müller, *Alexander von Humboldt Institute for Internet and Society, Germany*

We present the design and evaluation of MyPosition, a public display in the form of a large projection, featuring an interactive poll visualization. MyPosition aims at facilitating the deliberation and comparison of individual opinions on locally relevant topics in an opportunistic and engaging way. We evaluated MyPosition in an in-the-wild study and demonstrated that the public and engaging nature of the installation was effective in enticing participation and

discussion. We found that (i) the increased identifiability of voters positively impacted the engagement with and the social debate around the installation, however lowered the actual voting rate; (ii) people submitted their personal opinion instead of playing around with the interactive features; and (iii) the display led to considerable discussion as well as nudging among people, in particular in zones beyond the interaction area in front of the screen.

Gaming

Location: Dover AB
Chair: Jacob Biehl, *FX Palo Alto Laboratory, USA*

How Players Value their Characters in World of Warcraft

Ian J Livingston, *University of Saskatchewan, Canada*
Carl Gutwin, *University of Saskatchewan, Canada*
Regan L Mandryk, *University of Saskatchewan, Canada*
Max Birk, *University of Saskatchewan, Canada*

Characters in games such as World of Warcraft allow players to act in the game world and to interact with others. Game characters and avatars are a mediated form of self-representation for the player, but some research suggests that players also view characters in other ways that have to do with the kinds of value that the characters provide. To better understand the ways that players value their characters in an online environment, we carried out a semi-structured interview study of twenty World of Warcraft players. From our data we identify ten kinds of value that characters can provide - including utility, investment, communication, memory, enjoyment, and representations of relationships, as well as value as an opportunity for experience, creativity, sociability, and self-expression. The analytical lens of value provides a new understanding of the ways that players appreciate characters in online multi-user worlds. Our results can help developers understand and enhance an element of multi-player games that contributes greatly to player experience and satisfaction.

The Effects of Consistency Maintenance Methods on Player Experience and Performance in Networked Games

Cheryl Savery, *Queen's University, Canada*
Nicholas Graham, *Queen's University, Canada*
Carl Gutwin, *University of Saskatchewan, Canada*
Michelle Brown, *York University, Canada*

Network lag is a fact of life for networked games and can cause game states to diverge at different nodes in the network, making it difficult to maintain the illusion of a single shared space. Lag compensation techniques have been proposed to try and maintain consistency. However, these techniques do not address all of the issues that arise due to diverging states. In particular, current understanding of consistency maintenance does not indicate how to make game-critical decisions when there are divergent views, nor does it indicate how to repair inconsistencies. These two issues - decision-making and error repair - can have substantial effects on how players view the game, but there is little information about these effects. To

address this shortcoming, we carried out an experiment to test the effects of different choices. Our study confirms that decision-making and error repair can have significant effects on player experience and performance, and shows that that simple consistency is often not as important as these other factors.

The Identification of Deviance and its Impact on Retention in a Multiplayer Game

Kenneth B Shores, *University of Minnesota, USA*
Yilin He, *University of Minnesota, USA*
Kristina L Swanenburg, *University of Pittsburgh, USA*
Robert Kraut, *Carnegie Mellon University, USA*
John Riedl, *University of Minnesota, USA*

Deviant behavior in online systems is a difficult problem to address. Consequences of deviance include driving off users and tarnishing the system's public image. We present an examination of these concepts in a popular online game, League of Legends. Using a large collection of game records and player-given feedback, we develop a metric, toxicity index, to identify deviant players. We then look at the effects of interacting with deviant players, including effects on retention. We find that toxic players have several significant predictive patterns, such as playing in more competitive game modes and playing with friends. We also show that toxic players drive away new players, but that experienced players are more resilient to deviant behavior. Based on our findings, we suggest methods to better identify and counteract the negative effects of deviance.

Wednesday　　　14:00 – 15:15

Panel: Making Cultures: Building Things & Building Communities

Location: Grand Ballroom 5
Coordinator: Daniela K Rosner, *University of Washington, USA*

Ingrid Erickson, *Rutgers University, USA*
Laura Forlano, *Illinois Institute of Technology, USA*
Andrea Gorbatai, *University of California, Berkeley, USA*
Steven J Jackson, *Cornell University, USA*
Beth Kolko, *University of Washington, USA*
Daniela K Rosner, *University of Washington, USA*

Cultures of making, customization and repair have gained recent visibility within the CSCW literature due to the alternative framings of design and use they present. This panel brings together scholars across human-computer interaction, interaction design, information studies, and science and technology studies to examine the forms of social organization and technological production that come from maker and repair collectives.

Multiple Dimensions and Displays

Location: Grand Ballroom 6
Chair: Joseph Konstan, *University of Minnesota, USA*

Quick and Dirty: Streamlined 3D Scanning in Archaeology

Jarrod Knibbe, *University of Bristol, UK*
Kenton P O'Hara, *Microsoft Research, UK*
Angeliki Chrysanthi, *University of Southampton, UK*
Mark T. Marshall, *University of Bristol, UK / Sheffield Hallam University, UK*
Peter D Bennett, *University of Bristol, UK*
Graeme Earl, *University of Southampton, UK*
Shahram Izadi, *Microsoft Research, UK*
Mike Fraser, *University of Bristol, UK*

Capturing data is a key part of archaeological practice, whether for preserving records or to aid interpretation. But the technologies used are complex and expensive, resulting in time-consuming processes associated with their use. These processes force a separation between ongoing interpretive work and capture. Through two field studies we elicit more detail as to what is important about this interpretive work and what might be gained through a closer integration of capture technology with these practices. Drawing on these insights, we go on to present a novel, portable, wireless 3D modeling system that emphasizes 'quick and dirty' capture. We discuss its design rational in relation to our field observations and evaluate this rationale further by giving the system to archaeological experts to explore in a variety of settings. While our device compromises on the resolution of traditional 3D scanners, its support of interpretation through emphasis on real-time capture, review and manipulability suggests it could be a valuable tool for the future of archaeology.

Support for Deictic Pointing in CVEs: Still Fragmented after All These Years?

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

Pointing gestures - particularly deictic references - are ubiquitous in face-to-face communication. However, deictic pointing can be much more difficult in collaborative virtual environments (CVEs) than in everyday life - in some of the earliest CVE studies, researchers found that 'fragmented interactions' greatly complicated communication. In the fifteen years since these studies appeared, the technologies used in CVEs have improved substantially. What these advances mean for the problems of fragmentation and deictic gesture, however, is unclear. We conducted an observational study of deictic pointing in a CVE with techniques that may reduce fragmentation: extra-wide and third-person views, precise control over an avatar's pointing arm, and visual enhancements such as object highlighting and laser pointing. Our study shows that although pointing has come a long way, problems of fragmentation still occur, and that visual and view enhancements can cause new problems for collaboration, even as they solve others. Surprisingly, the visibility of preparatory actions of a gesture remained important, even when augmented pointing techniques were used.

Photoportals: Shared References in Space and Time

André Kunert, *Bauhaus-Universität Weimar, Germany*
Alexander Kulik, *Bauhaus-Universität Weimar, Germany*
Stephan Beck, *Bauhaus-Universität Weimar, Germany*
Bernd Froehlich, *Bauhaus-Universität Weimar, Germany*

Photoportals build on digital photography as a unifying metaphor for reference-based interaction in 3D virtual environments. Virtual photos and videos serve as threedimensional references to objects, places, moments in time and activities of users. Our Photoportals also provide access to intermediate or alternative versions of a scenario and allow the review of recorded task sequences that include life-size representations of the captured users. We propose to exploit such references to structure collaborative activities of collocated and remote users. Photoportals offer additional access points for multiple users and encourage mutual support through the preparation and rovision of references for manipulation and navigation tasks. They support the pattern of territoriality with configurable space representations that can be used for private interaction or storage as well as they can be shared and exchanged between participants.

Social Media & Politics

Location: Grand Ballroom 1 & 2
Gloria Mark, UC Irvine, USA

Managing Political Differences in Social Media

Catherine Grevet, *Georgia Institute of Technology, USA*
Loren G Terveen, *University of Minnesota, USA*
Eric Gilbert, *Georgia Institute of Technology, USA*

Most people are friends with people like themselves, a concept known as homophily. Exposure to diversity, however, makes us more informed as individuals and as a society. In this paper, we investigate political disagreements on Face-book to explore the conditions under which diverse opin-ions can coexist online. Via a mixed methods approach comprising 103 survey responses and 13 interviews with politically engaged American social media users, we found that participants who perceived less homophily among their friends engaged less on Facebook than those who perceived more. Unfortunately, weak ties were particularly brittle to political disagreements, despite being the ties most likely to offer diversity. Finally, based on our findings we suggest potential design opportunities to bridge across ideological difference: 1) support exposure to weak ties; and 2) make common ground visible while friends converse.

Social Media Supporting Political Deliberation Across Multiple Public Spheres: Towards Depolarization

Bryan C Semaan, *University of Hawaii at Manoa, USA*
Scott P Robertson, *University of Hawaii at Manoa, USA*
Sara Douglas, *University of Hawaii at Manoa, USA*
Misa T Maruyama, *University of Hawaii at Manoa, USA*

This paper reports on a qualitative study of social media use for political deliberation by 21 U.S. citizens. In observing people's interactions in the "sprawling public sphere" across multiple social media tools (in both political and non-political spaces), we found that social media supported the interactional dimensions of deliberative democracy-- the interaction with media and the interaction between people. People used multiple tools through which they: were serendipitously exposed to diverse political information, constructed diverse information feeds, disseminated diverse information, and engaged in respectful and reasoned political discussions with diverse audiences. When people's civic agency was inhibited when using a tool, they often adopted or re-appropriated another tool. Contrary to the polarization perspective, we find that people were purposefully seeking diverse information and discussants. On a deeper level, some individuals altered their perspectives as a result of the interactions they were having in the online public sphere.

Hybrid Media Consumption: How Tweeting During a Televised Political Debate Influences the Vote Decision

Misa T Maruyama, *University of Hawaii at Manoa, USA*
Scott P Robertson, *University of Hawaii at Manoa, USA*
Sara K Douglas, *University of Hawaii at Manoa, USA*
Bryan C Semaan, *University of Hawaii at Manoa, USA*
Heather A Faucett, *University of Hawaii at Manoa, USA*

An increasing number of people are using microblogs to broadcast their thoughts in real time as they watch televised political events. Microblogging Social Network Sites (SNSs) such as Twitter generate a parallel stream of information and opinion. It is presumed that the additional content enhances the viewing experience. But our experiment explores the validity of this assumption. We studied how tweeting or passively observing Twitter during a debate influenced affect, recall and vote decision. For most measures, participants' average feeling toward the candidates did not depend on Twitter activity. But Twitter activity did matter in a mock vote. People who tweeted changed their voting choice to reflect the majority sentiment on Twitter. The paper's contribution is an analysis of the user's cognitive and affective experience during political deliberation.

Crowdsourcing Complexity

Location: Grand Ballroom 3 & 4
Chair: Karrie Karahalios, *University of Illinois at Urbana-Champaign*

Voyant: Generating Structured Feedback on Visual Designs Using a Crowd of Non-Experts

Anbang Xu, *University of Illinois at Urbana-Champaign, USA*
Shih-Wen Huang, *University of Washington, USA*
Brian Bailey, *University of Illinois at Urbana-Champaign, USA*

Feedback on designs is critical for helping users iterate toward effective solutions. This paper presents Voyant, a novel system giving users access to a non-expert crowd to receive structured feedback on the perceptions of their designs from a target audience. Based on a formative study, the system generates the elements seen in a design, the order in which elements are noticed, impressions formed when the design is first viewed,

and interpretation of the design relative to guidelines in the domain and the user's stated goals. An evaluation of the system was conducted with users and their designs. Users reported the feedback about impressions and interpretation of their goals was most helpful, though the other feedback types were also valued. Users found the coordinated views in Voyant useful for analyzing relations between the crowd's perception of a design and the visual elements within it. The monetary cost of generating the feedback was considered a fair tradeoff for not having to organize critiques or interrupt peers.

Reviewing versus Doing: Learning and Performance in Crowd Assessment

Haiyi Zhu, *Carnegie Mellon University, USA*
Steven P Dow, *Carnegie Mellon University, USA*
Robert E Kraut, *Carnegie Mellon University, USA*
Aniket Kittur, *Carnegie Mellon University, USA*

In modern crowdsourcing markets, requesters face the challenge of training and managing large transient workforces. Requesters can hire peer workers to review others' work, but the value may be marginal, especially if the reviewers lack requisite knowledge. Our research explores if and how workers learn and improve their performance in a task do-main by serving as peer reviewers. Further, we investigate whether peer reviewing may be more effective in teams where the reviewers can reach consensus through discussion. An online between-subjects experiment compares the tradeoffs of reviewing versus producing work using three different organization strategies: working individually, working as an interactive team, and aggregating individuals into nominal groups. The results show that workers who review others' work perform better on subsequent tasks than workers who just produce. We also find that interactive reviewer teams outperform individual reviewers on all quality measures. However, aggregating individual reviewers into nominal groups produces better quality assessments than interactive teams, except in task domains where discussion helps overcome individual misconceptions.

AskSheet: Efficient Human Computation for Decision Making with Spreadsheets

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

The wealth of information and social resources online has empowered individuals and businesses with an unprecedented volume of information to aid in decision making processes. However, this potential is often limited by the labor required to find and process the many details needed for a given decision. We present AskSheet, a general system that leverages human computation to acquire the inputs to a decision model, which is provided by the user in the form of an arbitrary spreadsheet. The core innovation of AskSheet is the capability to prioritize the inputs to enable the crowd to focus on the details that impact the end result most. This can be viewed as an adaptation of individual information seeking behavior to crowds. The prioritization algorithms use a probabilistic analysis of the spreadsheet formulas to calculate value of information for each

of the inputs. This paper describes the method, the AskSheet system, and our experiences using it.

Personal Health Management
Location: Grand Ballroom 7 & 8
Chair: Helena Mentis, *University of Maryland, Baltimore County, USA*

Cancer Navigation: Opportunities and Challenges for Facilitating the Breast Cancer Journey

Maia Jacobs, *Georgia Institute of Technology, USA*
James Clawson, *Georgia Institute of Technology, USA*
Elizabeth D Mynatt, *Georgia Institute of Technology, USA*

Cancer navigation programs help patients overcome emotional, financial, and logistical challenges not typically addressed by the medical system. In this paper, we provide a detailed description of a rural cancer navigation organization, specifically detailing the roles collaboration and technology play in supporting navigation work. Examining navigation from a CSCW perspective, we see that navigation is a collaborative care system requiring coordination with patients, providers, and other navigators. Our study reveals a number of design opportunities for supporting navigation in the areas of resource monitoring, knowledge transfer, case management, long term navigation, and development of best practices. Supporting cancer navigation will be a critical step towards improving the healthcare experience for cancer patients.

Craving, Creating, and Constructing Comfort: Insights and Opportunities for Technology in Hospice

Robert Douglas Ferguson, *McGill University, Canada*
Michael Massimi, *Microsoft Research, UK*
Emily Anne Crist, *McGill University, Canada*
Karyn Anne Moffatt, *McGill University, Canada*

Hospice is a medical setting for patients with terminal illnesses where active treatment is withdrawn in favor of providing comfort and dignity at the end of life. Providing comfort extends beyond managing physical pain to include social, emotional, spiritual, and environmental aspects of care. Through interviews with 16 family members of past hospice patients, we studied technology's role in achieving these multifaceted dimensions of comfort. Comfort was an ongoing pursuit, requiring the involvement of diverse stakeholders; communication technologies were selectively chosen in service of this achievement. We provide opportunities and recommendations for technologies in hospice, including the need for varying degrees of richness and symmetry, and for support for life-affirming acts. To our knowledge, this constitutes the first study, in the CSCW and HCI literatures, of communication technology use during the final days of a person's life, with implications both for hospice and for the end of life more broadly.

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Life Transitions and Online Health Communities: Reflecting on Adoption, Use, and Disengagement

Michael Massimi, *Microsoft Research, UK*
Jackie L Bender, *University Health Network, Canada*
Holly O Witteman, *Universite Laval, Canada*
Osman H Ahmed, *University of Otago, New Zealand*

Online health communities are places where people can come together in order to exchange social support at a particular point in an individual's life. There are, however, relatively few accounts that look across multiple communities across the lifespan. In this paper, we reflect on four case studies of research on different online health communities in order to identify patterns in how individuals selectively adopt, use, and disengage from these communities throughout their lives. We argue that users leaving communities is not necessarily a failing of the site's design or purpose; rather, it is a logical reaction to changing life circumstances. In characterizing this pattern, we contribute a set of implications for design and management that bear consideration by online community designers, developers, moderators, and end users. Ultimately this may lead to a smoother transition from community to community and ensure that social support needs are being met more consistently in response to changing life circumstances.

Geographic Distance

Location: Grand Ballroom 9 & 10
Chair: Andrea Forte, *Drexel University, USA*

City, Self, Network: Transnational Migrants and Online Identity Work

Jessica Lingel, *Microsoft Research, USA*
Mor Naaman, *Cornell Tech, USA*
danah m boyd, *Microsoft Research, USA*

This paper uses qualitative interviews with 26 transnational migrants in New York City to analyze socio-technical practices related to online identity work. We focus specifically on the use of Facebook, where benefits included keeping in touch with friends and family abroad and documenting everyday urban life. At the same time, many participants also reported experiences of fatigue, socio-cultural tensions and concerns about maintaining a sense of personal privacy. These experiences highlight how transnational practices complicate context collapse, where the geographic dispersal of participants' personal networks renders visible conflicts of "flattened" online networks. Our findings also suggest a kind of technology-enabled code-switching, where transnational migrants leverage social media to perform identities that alternate between communities, nationalities and geographies. This analysis informs HCI research on transnationalism and technological practices, as well as the complexities of online identity work in terms of shifting social and spatial contexts.

Twitter ain't Without Frontiers: Economic, Social, and Cultural Boundaries in International Communication

Ruth García-Gavilanes, *Universitat Pompeu Fabra, Spain / Yahoo! Lab, Spain*
Yelena Mejova, *Yahoo! Research, Spain*
Daniele Quercia, *Yahoo! Research, Spain*

Has internet breached the barriers of geographic distance and brought about a global communication network? In this study we show that the international Twitter communication landscape is not only still largely predetermined by physical distance, but that it also depends on countries' social, economic, and cultural attributes. We describe a study of an international Twitter mention network of 13 million users across over 100 countries. We show that the Gravity Model, which hypothesizes that the flow between two areas is proportional to their masses (which we approximate using internet penetration) and inversely proportional to the distance between them, is correlated (r=0.68) with the international communication flow. Using this model, along with other social, economic, and cultural variables, we predict the communication volume at Adjusted R2 of 0.80, with trade, language and racial intolerance especially impacting communication. We discuss the implications of these barriers to communication in the frameworks of collaborative work, software design, and recommendation systems.

Inferring the Origin Locations of Tweets with Quantitative Confidence

Reid Priedhorsky, *Los Alamos National Laboratory, USA*
Aron Culotta, *Northeastern Illinois University, USA*
Sara Y Del Valle, *Los Alamos National Laboratory, USA*

Social Internet content plays an increasingly critical role in many domains, including public health, disaster management, and politics. However, its utility is limited by missing geographic information; for example, fewer than 1.6% of Twitter messages (tweets) contain a geotag. We propose a scalable, content-based approach to estimate the location of tweets using a novel yet simple variant of gaussian mixture models. Further, because real-world applications depend on quantified uncertainty of such estimates, we propose novel metrics of accuracy, precision, and calibration, and we evaluate our approach accordingly. Experiments on 13 million global, comprehensively multi-lingual tweets show that our approach yields reliable, well-calibrated results competitive with previous computationally intensive methods. We also show that a relatively small number of training data are required for good estimates (roughly 30,000 tweets), and models are quite time-invariant (effective on tweets many weeks newer than the training set). Finally, we show that toponyms and languages with small geographic footprint provide the most useful location signals.

Distributed Teams

Location: Dover AB
Chair: Mary Beth Rosson, *The Pennsylvania State University, USA*

Exploring the Social-technological Gap in Telesurgery: Collaboration within Distributed OR Teams

Pieter Duysburgh, *IBBT-SMIT/VUB, Belgium*
Shirley A. Elprama, *IBBT-SMIT/VUB, Belgium*
An Jacobs, *IBBT-SMIT/VUB, Belgium*

While its technical feasibility has been illustrated over a decade ago, today, robot-assisted telesurgery is not a part of everyday surgical practice. The thresholds for adoption of telesurgery are mostly seen as technical, legal and financial challenges. However, the aim of this paper is to understand collaboration within distributed OR teams, which seems to be under examined in research on telesurgery. By means of a proxy-technology assessment and a series of interviews, collaborative challenges for telesurgery have been identified. These include the unfamiliarity of the remote surgeon with the practices of the local operating room team and the patient. In addition, verbal and non-verbal communication have to be mediated in a telesurgery setting, making it difficult for the remote surgeon to have an overview and stay in control during surgery. With this research, we illustrate how trust issues in distributed teams manifest in OR teams in a telesurgery setting.

How Beliefs about the Presence of Machine Translation Impact Multilingual Collaborations

Ge Gao, *Cornell University, USA*
Bin Xu, *Cornell University, USA*
Dan Cosley, *Cornell University, USA*
Susan R. Fussell, *Cornell University, USA*

Traditional communication tools tend to make their presence known, e.g., "when I and my collaborator are using IM to discuss our work, how could we not realize the actual presence of IM?" In the case of machine translation (MT) mediated collaborations, however, the absence or presence of MT is not obvious. English sentences with poor grammar can result from both a partner's lack of fluency and errors in the MT process. We hypothesize that partners' attributions about the source of the errors affects their collaboration experience. To test this hypothesis, we conducted a laboratory experiment in which monolingual native English speaking participants collaborated with bilingual native-Mandarin speakers on a map navigation task. Participants were randomly assigned into a 2 (beliefs about MT: absence vs. presence) by 2 (actual mediation of MT: absence vs. presence) experiment design. Beliefs about presence of MT significantly impacted the collaboration experience, opening new opportunities for both research and design around MT-mediated collaborations.

Sounds of Silence: Exploring Contributions to Conversations, Non-Responses and the Impact of Mediating Technologies in Triple Space

Joon Suk Lee, *Virginia State University, USA / Virginia Polytechnic Institute and State University, USA*
Deborah Tatar, *Virginia Polytechnic Institute and State University, USA*

We investigate collocated triads as they play a collaborative, problem-solving game using distributed technology on laptops. We examine how different triads attain and maintain mutual understanding in triple-space-when working on a hard problem, with communicating technologies and face-to-face interaction. We present qualitative and quantitative evidence that demonstrates the descriptive adequacy of a model of triadic interaction in triple space. We use that model to argue that the notion of good-enoughness is not a group attribute, but rather tied to each dyadic pair. This intellectual framework allows us to examine how non-response operates within these triple-space interactions when interaction is supported by different media. The results related to non-response raise the possibility that different media may result in subtle changes influences on the balance of participant goals.

Closing Plenary and Keynote

Location: Grand Ballroom 5 & 6

Patrick Meier, *Director of Social Innovation at the Qatar Computing Research Institute (QCRI)*

Wednesday   15:45 – 17:15

Next Generation Humanitarian Computing

Humanitarian organizations are completely unprepared to deal with the rise of Big (Crisis) Data--the massive overflow of user-generated content posted on social media during disasters. To be sure, humanitarian organizations have no expertise in advanced computing. At the same time, the overflow of information during disasters can be as paralyzing to humanitarian response as the absence of information. This talk will highlight how the computing community can make a significant difference in humanitarian response. To demonstrate this, the talk will explain how we are experimenting with human and machine computing to make sense of--and verify--Big Crisis Data. For example, we can automatically extract crisis information from Twitter by combining microtasking with machine learning. This would enable UN information management officers to create their own classifiers on the fly. In terms of verification, we can draw on techniques from time-critical crowdsourcing to rapidly collect and triangulate evidence during disasters. This would allow emergency managers to quickly debunk rumors in the immediate aftermath of a crisis. In conclusion, the talk will outline how we can actively bridge the gap between humanitarian and computing communities.

Patrick Meier (PhD) is an internationally recognized thought leader on the application of new technologies for humanitarian response. He presently serves as Director of Social Innovation at the Qatar Foundation's Computing Research Institute (QCRI) where he and his team use Advanced Computing to develop Next Generation Humanitarian Technologies. Patrick is also a UNICEF Humanitarian Innovations Fellow, a Rockefeller Foundation and PopTech Fellow, and a Fellow at Harvard University where he previously co-directed the Harvard Humanitarian Initiative's Program on Crisis Mapping. His influential blog iRevolution has received well over 1 million hits and been cited by the New York Times, UK Guardian, Slate, Wired, Scientific American and New Scientist, amongst others. Patrick tweets at @patrickmeier.

http://irevolution.net/

WEDNESDAY

Notes:

Welcome to Baltimore!

The city of Baltimore has a rich history spanning nearly 300 years. The second largest seaport in the Mid-Atlantic, Baltimore was once second only to New York as an immigration entry point, fueling diversity and population growth. The city also played a major role in the War of 1812, with Francis Scott Key famously penning the Star Spangled Banner during the Battle of Baltimore. Today, the city contains a thriving metropolitan region of nearly three million people and sits 45 minutes north of Washington, DC. The Marriott Waterfront's location at the eastern end of the Inner Harbor places CSCW attendees near several popular neighborhoods, including Little Italy and Fells Point, as well as the harbor itself, which is a popular tourist location that boasts the National Aquarium, Science Center, Port Discovery, and a wide range of food and entertainment options. Baltimore is also a hotspot for arts, history, and culture, ranging from the Baltimore Symphony Orchestra and Peabody to the Museum of Industry and Fort McHenry. Finally, sports fans will note the much-vaunted stadiums for the Orioles and Ravens on their drive into the city. All in all, there is never a shortage of things to do in this vibrant city on the Chesapeake Bay!

GRAND FOYER NORTH

RESTROOMS

GRAND FOYER WEST

GRAND BALLROOM

VII | VIII | IX | X

VI

V

I | II | III | IV

BACK OF HOUSE

FREIGHT ELEVATOR

CONVENTION REGISTRATION

1

A
B
C

DOVER

RESTROOMS

BOARDROOM FOYER

BOARD-ROOM

ATLANTIC

BRISTOL

CHASSEUR

Lounge →

PARKING GARAGE