

Proceedings of the 25th Australian Computer-Human Interaction Conference

Shen, Heifeng; Smith, Ross; Paay, Jeni; Calder, Paul; Wyeld, Theodor

Publication date:
2013

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):
Shen, H., Smith, R., Paay, J., Calder, P., & Wyeld, T. (Eds.) (2013). *Proceedings of the 25th Australian Computer-Human Interaction Conference*. Association for Computing Machinery (ACM).

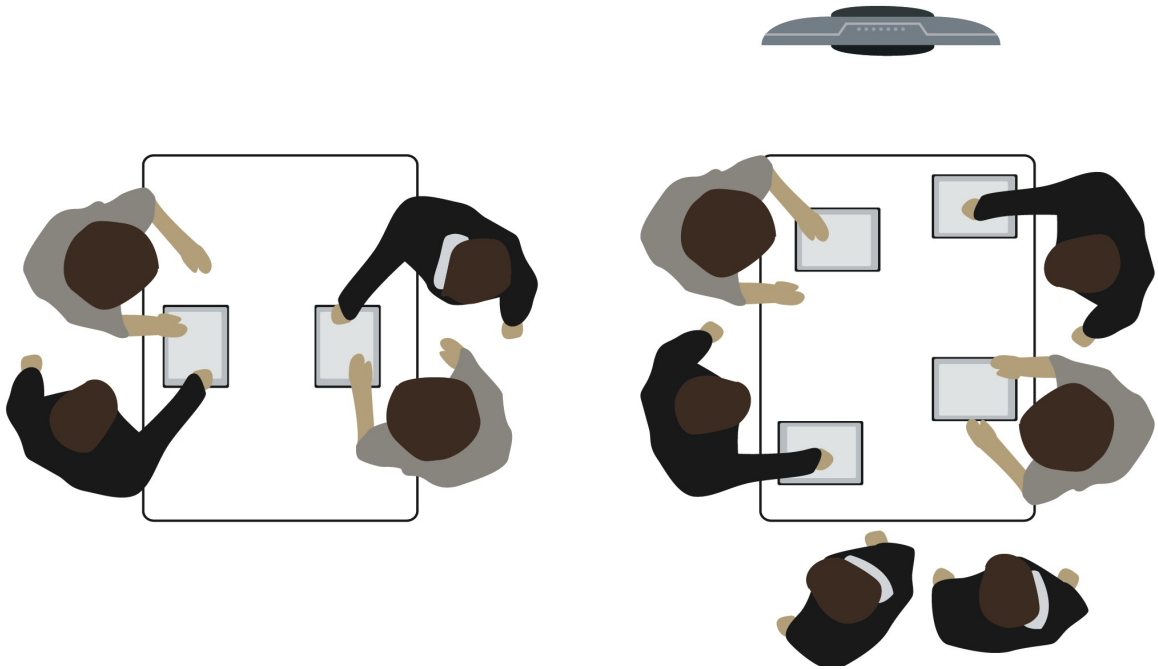
General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.



Proceedings

25 – 29 November
Flinders University
Adelaide Australia



OzCHI 2013

Augmentation
Application
Innovation
Collaboration

Cover image: Courtesy of Andrew Chapman, based on line diagrams adapted from a screen image from an app built with GestureWorks.

***Proceedings of the 25th Australian Computer-Human Interaction
Conference (OzCHI 2013)***

*Flinders University, Adelaide, Australia
25 - 29 November 2013*

Edited by:

Haifeng Shen, Ross Smith, Jeni Paay, Paul Calder and Theodor Wyeld

Organised by:

*Computer-Human Interaction Special Interest Group (CHISIG) of the Human
Factors & Ergonomics Society of Australia (HFESA)*

In cooperation with ACM SIGCHI

Additional copies are available at the ACM Digital Library (<http://portal.acm.org/dl.cfm>) or can be ordered from the CHISIG secretary (secretary@chisig.org)

ISBN: 978-1-4503-2525-7

Table of Contents

Message from the Technical Program Committee	vii
<i>Haifeng Shen, Ross Smith, Jeni Paay and Paul Calder</i>	
List of Technical Program Committee Members	viii
1 Mobility and Security	1
A Recommendation for Designing Mobile Pedestrian Navigation System in University Campuses	3
<i>Tony Shu-Hsien Wang, Dian Tjondronegoro, Michael Docherty, Wei Song and Joshua Fuglsang</i>	
Classifying Users of Mobile Pedestrian Navigation Tools	13
<i>James Wen, William S. Helton and Mark Billingham</i>	
Realistic Books for Small-Screen Devices	17
<i>Annika Hinze, Doris Jung and Lakshmi Muthaiah</i>	
“Who decides?” Security and Privacy in the Wild	27
<i>Kenneth Radke, Colin Boyd, Juan Gonzalez Nieto and Laurie Buys</i>	
Trust and Cooperation in Text-Based Computer-Mediated Communication	37
<i>Ahmad Khawaji, Fang Chen, Nadine Marcus and Jianlong Zhou</i>	
2 User Experience	41
Understanding ‘Tingle’ in Opera Performances	43
<i>Tuck Wah Leong and Peter Wright</i>	
Understanding “Cool” in Human-Computer Interaction Research and Design	53
<i>Dimitrios Raptis, Jesper Kjeldskov and Mikael Skov</i>	
“It’s alive, it’s magic, it’s in love with you”: Opportunities, Challenges and Open Questions for Actuated Interfaces	63
<i>Majken Kirkegaard Rasmussen, Erik Grönvall, Sofie Kinch and Marianne Graves Petersen</i>	
The Effect of Language in Answering Qualitative Questions in User Experience Evaluation Web-Surveys	73
<i>Tanja Walsh, Piia Nurkka, Helen Petrie and Jaana Olsson</i>	
3 Interface and Interaction Technologies	83
Harnessing Multi-User Design and Computation to Devise Archetypal Whole-of-Body Gestures: A Novel Framework	85
<i>Suranjith De Silva, Michael Barlow and Adam Easton</i>	
Four-dimensional Viewing Direction Control by Principal Vanishing Points Operation and Its Application to Four-dimensional Fly-through Experience	95
<i>Takanobu Miwa, Yukihiro Sakai and Shuji Hashimoto</i>	

Investigating Mobile Stereoscopic 3D Touchscreen Interaction	105
<i>Ashley Colley, Jonna Häkkinä, Johannes Schöning and Maaret Posti</i>	
Analysing Mouse activity for Cognitive Load detection	115
<i>Syed Arshad, Yang Wang and Fang Chen</i>	
Comparison of gestural, touch, and mouse interaction with Fitts' Law	119
<i>Lawrence Sambrooks and Brett Wilkinson</i>	
4 Human Factors and Programming	123
Foundations for Infrastructure and Interfaces to Support User Control in Long-term User Modelling .	125
<i>Debjanee Barua, Judy Kay and Cécile Paris</i>	
Towards a Cognition-based Assessment Protocol for User-Centered Design	135
<i>Jemma Harris, Mark Wiggins, Ben Morrison and Natalie Morrison</i>	
Interfaces for Discourse Summarisation: A Human Factors Analysis	139
<i>Agata McCormac, Kathryn Parsons, Marcus Butavicius, Aaron Ceglar, Derek Weber, Tim Pattison, Richard Leibbrant, Kenneth Treharne and David Powers</i>	
Towards a Creativity Support Tool in Processing: Understanding the Needs of Creative Coders	143
<i>Mark C. Mitchell and Oliver Bown</i>	
A sense of working there: the user experience of Agile software developers	147
<i>Julia Prior</i>	
5 Interaction Design	151
Proxemic Interaction in a Multi-Room Music System	153
<i>Henrik Sørensen, Mathies G. Kristensen, Jesper Kjeldskov and Mikael B. Skov</i>	
Evaluating organic 3D sculpting using Natural User Interfaces with the Kinect	163
<i>Bradley Wesson and Brett Wilkinson</i>	
Mobile Ambient Presence	167
<i>Greg Wadley, Frank Vetere, Lars Kulik, Liza Hopkins and Julie Green</i>	
Favoured Attributes of In-Air Gestures in the Home Environment	171
<i>Karen Ho and Hanley Weng</i>	
The Leap Motion controller: A view on sign language	175
<i>Leigh Ellen Potter, Jake Araullo and Lewis Carter</i>	
6 Learning Environments	179
Assessing the Usability of Students Object-oriented Language with First-year IT Students: A Case Study	181
<i>Eugene McArdle, Jason Holdsworth and Ickjai Lee</i>	
Integrating orchestration of ubiquitous and pervasive learning environments	189
<i>Roberto Martinez-Maldonado, Yannis Dimitriadis, Andrew Clayphan, Juan A. Muñoz-Cristóbal, Luis P. Prieto, María Jesús Rodríguez-Triana and Judy Kay</i>	
Understanding the Effects of Discreet Real-time Social Interaction on Student Engagement in Lectures	193
<i>Mark D. Reilly, Haifeng Shen, Paul R. Calder and Henry Been-Lirn Duh</i>	
MolyPoly: Immersive Gesture Controlled Chemistry Teaching System	197
<i>SooJeong Yoo, Callum Parker, Winyu Chinthammit and Susan Turland</i>	

Engaging Stakeholders through Facebook for Teacher Professional Development in Indonesia	201
<i>Eunice Sari and Adi Tedjasaputra</i>	
7 Gaming and Motivational Aspects	205
Being Chased by Zombies! Understanding the Experience of Mixed Reality Quests	207
<i>Alexander Kan, Martin Gibbs and Bernd Ploderer</i>	
Measuring Audience Experience in Social Videogaming	217
<i>John Downs, Frank Vetere, Steve Howard and Steve Loughnan</i>	
How are Gamers better at Drawing Teapots than non-Gamers?	221
<i>Theodor Wyeld, Benedict Williams and Zak Barbuto</i>	
Exploring Internet CO₂ Emissions as an Auditory Display	225
<i>Stuart McFarlane, Frank Feltham and Darrin Verhagen</i>	
Awesome! Conveying Satisfaction on the App Store	229
<i>Leonard Hoon, Rajesh Vasa, Gloria Yoanita Martino, Jean-Guy Schneider and Kon Mouzakis</i>	
8 Sustainability	233
Promoting Pro-environmental Behaviour: a tale of two systems	235
<i>Jeni Paay, Jesper Kjeldskov, Mikael Skov, Rahuvaran Pathmanathan and Jon Pearce</i>	
Curiosity to cupboard- self reported disengagement with energy use feedback over time	245
<i>Stephen Snow, Laurie Buys, Paul Roe and Margot Brereton</i>	
Sustainable HCI for Grassroots Urban Food-Growing Communities	255
<i>Sara Heitlinger, Nick Bryan-Kinns and Janis Jefferies</i>	
9 Interaction and Visualisation	265
Enhancing Spatial Perception and User Experience in Video Games with Volumetric Shadows	267
<i>Tuukka M. Takala, Perttu Hämäläinen, Mikael Matveinen, Taru Simonen and Jari Takatalo</i>	
How Screen Size Influences Chinese Readability	277
<i>You Wang, Zhihao Zhao, Danni Wang, Guihuan Feng and Bin Luo</i>	
A Leap-supported, hybrid AR interface approach	281
<i>Holger Regenbrecht, Jonny Collins and Simon Hoermann</i>	
The Effect of Subject Familiarity on Comprehension and Eye Movements during Reading	285
<i>Leana Copeland and Tom Gedeon</i>	
One-line GUI: Minimized graphic user interface for interactive TV	289
<i>Hyungkun Park, Yeseul Kim, Jeeyong Chung, Sangyoung Cho, Eunji Woo and Woohun Lee</i>	
10 Evaluation and Usability	293
An Evaluation of Advanced User Interface Customization	295
<i>Clemens Zeidler, Christof Lutteroth and Gerald Weber</i>	
Quantitative Evaluation of Media Space Configuration in a Task-Oriented Remote Conference System	305
<i>Kyle Koh and Jinwook Seo</i>	
Physicality Quantitative Evaluation Method	315
<i>Mahmood Ashraf and Masitah Ghazali</i>	

Trial by Tablet: User Evaluation of the Digital Courtroom	325
<i>Graham Farrell, Robert T. Tipping, Vivienne Farrell and Clinton J. Woodward</i>	
Measuring Interactivity at an Interactive Public Information Display	329
<i>Christopher Ackad, Rainer Wasinger, Richard Gluga, Judy Kay and Martin Tomitsch</i>	
11 Ubiquitous Computing	333
Internet of Things: a review of literature and products	335
<i>Treffyn Lynch Koreshoff, Toni Robertson and Tuck Wah Leong</i>	
Understanding Spatial Contexts of the Real World under Explicit or Tacit Roles of Location	345
<i>Masaya Okada and Masahiro Tada</i>	
Working In the Clouds: A Study of Contemporary Practices	355
<i>Anita Gisch and Toni Robertson</i>	
SmartFinger: Connecting Devices, Objects and People seamlessly	359
<i>Shanaka Ransiri, Roshan Lalintha Peiris, Kian Peen Yeo and Suranga Nanayakkara</i>	
Approaching a human-centred Internet of Things	363
<i>Treffyn Lynch Koreshoff, Tuck Wah Leong and Toni Robertson</i>	
The Irony and Re-interpretation of Our Quantified Self	367
<i>Rafael A. Calvo and Dorian Peters</i>	
12 Touch Interaction	371
An approach for designing and evaluating a plug-in vision-based tabletop touch identification system	373
<i>Andrew Clayphan, Roberto Martinez Maldonado, Christopher Ackad and Judy Kay</i>	
Pseudo-Pressure Detection and Its Use in Predictive Text Entry on Touchscreens	383
<i>Ahmed Sabbir Arif and Wolfgang Stuerzlinger</i>	
FingerInk: Turn your Glass into a Digital Board	393
<i>Alaa Halawani and Haibo Li</i>	
Evaluation of a New Error Prevention Technique for Mobile Touchscreen Text Entry	397
<i>Ahmed Sabbir Arif and Wolfgang Stuerzlinger</i>	
Designing Rich Touch Interaction through Proximity and 2.5D Force Sensing Touchpad	401
<i>Seongkook Heo, Jaehyun Han and Geehyuk Lee</i>	
13 Student Design Challenge	405
Family Room: Reducing Email Overload	407
<i>Sarah Ellen Webber, Kayla J. Heffernan, Behnaz Rostami Yeganeh, Fernando Estrada and Daina Augstkalns</i>	
TorteMail: Solving Email Information Overload	409
<i>Matthew Ritchie, Elizabeth Gilleran, Rowan Lucas, Nick Woods and Darrell Rivero</i>	
Vision of the Future of Email Featuring Upcoming Technology to Enhance the User Experience	411
<i>Marcel Penz, Kallirroï Pouliadou, Taís Mauk, Yedan Qian and Siyuan Fang</i>	
Threading Centric Approach Towards Email Client	413
<i>Mehul Agrawal, Mannu Amrit, Minal Jain, Himanshu Bansal and Abhinav Krishna</i>	
inBOX: Your Future Mail Box	415
<i>Gashaye Mahtemu, Jahnvi Mudgal, Parvathy V R, Rajib Bhakat and VSSS Sri Harsha Andukuri</i>	

Hush Tube: Designing a tangible and quieter email	417
<i>Kevin Gaunt, Jenni Toriseva, Regimantas Vegele and Mige Padegimaite</i>	
Semantic Emails: Agent Technology in Email Systems	419
<i>Vishnu M S, Dhruv Damle, Debanshu Bhaumik and Debashish Sahu</i>	
e-Tely Electronic stamps for augmenting emails	421
<i>Vishesh Kumar, Harshit Agrawal, Rishika Jain, Arka Bani and Prabhat Kumar</i>	
Convergent location-based messaging: design for the future email ecosystem	423
<i>Madyana Torres de Souza, Júlia Nacsa, James McIntyre, Idil Tunga and Jiaojiao Xu</i>	
14 Social and Collaboration Technologies	425
Gelatine: Making Coworking Places Gel for Better Collaboration and Social Learning	427
<i>Mark Bilandzic, Ronald Schroeter and Marcus Foth</i>	
Integrating Collaborative Context Information with Social Media - A Study of User Perceptions	437
<i>Ari-Heikki Sarjanoja, Minna Isomursu, Pekka Isomursu and Jonna Häkkinä</i>	
Interaction Patterns for Assessment of Learners in Tabletop Based Collaborative Learning Environment	447
<i>Ammar Al-Qaraghuli, Halimah Badioze Zaman, Azlina Ahmad and Jihan Raoof</i>	
Understanding the Fabric of Social Interactions for Ridesharing through Mining Social Networking Sites	451
<i>Seyed Hadi Mirisaei, Margot Brereton, Paul Roe and Fiona Redhead</i>	
15 Resilience and Ageing	455
“Reconstructing normality”: The use of infrastructure leftovers in crisis situations as inspiration for the design of resilient technology	457
<i>Amro Al-Akkad, Leonardo Ramirez, Sebastian Deneff, Alexander Boden, Lisa Wood, Monika Büscher and Andreas Zimmermann</i>	
Dispelling Ageing Myths in Technology Design	467
<i>Jeannette Durick, Toni Robertson, Margot Brereton, Frank Vetere and Bjorn Nansen</i>	
Engaging Older Adults in Activity Group Settings Playing Games on Touch Tablets	477
<i>Sonja Pedell, Jeanie Beh, Ken Mozuna and Susan Duong</i>	
Touch Screen Ensemble Music: Collaborative Interaction for Older People with Dementia	481
<i>Stu Favilla and Sonja Pedell</i>	
16 Information Seeking	485
Statistical Analysis and Implications of SNS Search in Under-Developed Countries	487
<i>Saif Ahmed, Md. Tanvir Alam Anik, Mashrura Tasnim and Hasan Shahid Ferdous</i>	
Boxing clever: how searchers use and adapt to a one-box library search	497
<i>Dana McKay and George Buchanan</i>	
Interactive Interface for Query Formulation	507
<i>Lu Chen and Caslon Chua</i>	
HCI Knowledge - Missing in Practice?	511
<i>Murni Mahmud, Idyawati Hussein, Abu Osman Md Tap and Nor Laila Md Noor</i>	

17 Health and Welfare	515
Participatory Design of an Online Therapy for Youth Mental Health	517
<i>Greg Wadley, Reeve Lederman, John Gleeson and Mario Alvarez-Jimenez</i>	
Exploratory development and evaluation of user interfaces for exposure therapy treatment	527
<i>Natalie Eustace, James Head-Mears and Andreas Dünser</i>	
Using critical-cue inventories to advance virtual patient technologies in psychological assessment	531
<i>Ben W. Morrison, Natalie M. V. Morrison, Julia Morton and Jemma Harris</i>	
Hanging out at the computer lab: How an innovative Australian program is helping young ‘Aspies’ . .	535
<i>Greg Wadley and Stefan Schutt</i>	
Supporting Tele-Assistance and Tele-Monitoring in Safety-Critical Environments	539
<i>Weidong Huang, Leila Alem, Surya Nepal and Danan Thilakanathan</i>	
18 Audio and Speech	543
Audio Stickies: Visually-guided Spatial Audio Annotations on a Mobile Augmented Reality Platform .	545
<i>Tobias Langlotz, Holger Regenbrecht, Stefanie Zollmann and Dieter Schmalstieg</i>	
Treemaps to Visualise and Navigate Speech Audio	555
<i>Fahmi Abdulhamid and Stuart Marshall</i>	
SpeechPlay: Composing and Sharing Expressive Speech Through Visually Augmented Text	565
<i>Kian Peen Yeo and Suranga Nanayakkara</i>	
Evaluating the Effectiveness of Audio-Visual Cues in Immersive User Interfaces	569
<i>Luke Hespanhol, Oliver Bown, Jingwen Cao and Martin Tomitsch</i>	
Index	573

Message from the Technical Program Committee

Welcome to Adelaide and OzCHI 2013, the annual conference of the Computer-Human Interaction Special Interest Group (CHISIG) of the Human Factors and Ergonomics Society of Australia (HFSA) and Australia's leading forum for a growing international community of practitioners, researchers, academics and students to exchange work in all areas of Human-Computer Interaction.

The technical program committee was comprised of 142 researchers, among whom 77 were from Australia and 65 were from overseas. All long and short papers were subject to double-blind peer review with each long paper reviewed by at least three committee members and each short paper reviewed by at least two committee members. Student design challenge, flash talk, and interactive poster submission were reviewed by their respective track chairs and committee members. This year we received 71 long papers, 83 short papers, and 38 student design challenge submissions from 30 countries, including Asia-Pacific, Europe, North America, and South America. After the rigorous peer review process, we accepted 34 long and 45 short papers, and 9 student design challenge finalists, overall 46% of submissions. The OzCHI proceedings are a publication of CHISIG, and also appear in the ACM (the Association for Computing Machinery) Digital Library (dl.acm.org).

The theme of this year's conference is Augmentation, Application, Innovation, and Collaboration, which reflects a variety of technical and social challenges in designing and deploying human-centred computer applications through augmenting our daily lives with innovative interaction and collaboration technologies. The programme covers a wide range of topics around this theme, including "Ubiquitous Computing", "Interface, Interaction, and Visualisation", "Health and Welfare", "Learning Environments", "Gaming", "Mobile and Touch Interaction", and "Social and Collaboration Technologies". We have organised 79 paper presentations in 18 sessions as well as a number of flash talks and an exhibition of interactive posters.

It is our pleasure and honour to have as our invited keynote speakers Kenton O'Hara from Microsoft Research Cambridge, UK, Bruce Thomas from UniSA, Australia, and Ben Kilsby from Holopoint Interactive, Adelaide, Australia. They will each give a talk addressing aspects of the conference theme. In Particular, Dr. O'Hara's talk on Interaction Proxemics addresses aspects of Innovation and Collaboration, Prof. Thomas' talk on Augmented Reality addresses aspects of Augmentation, and Mr. Kilsby's talk on Gaming addresses aspects of Application and Innovation. In addition, this year's conference also hosts interesting workshops, tutorials, and a doctoral consortium.

We hope you enjoy the programme of OzCHI 2013. Remember to take some time to enjoy the beauty and hospitality of the great city of Adelaide, which was recently voted by the Lonely Planet as one of the top ten cities to visit!

Haifeng Shen, Ross Smith, Jeni Paay & Paul Calder

OzCHI 2013 Program Chairs

List of Technical Program Committee Members

Safurah Abdul Jalil	Henry Gardner	Florian Nachreiner	Susanne Tak
Elin Eliana Abdul Rahim	Martin Gibbs	Hideyuki Nakanishi	Sampo Teräs
Truna Aka J. Turner	Voula Gkatzidou	Suranga Nanayakkara	Jimmy Ti
Ons Al-Shamaileh	Stephen Green	Bjorn Nansen	Feng Tian
Leena Arhippainen	John Grundy	Erik G. Nilsson	Claire Timpany
Magnus Bang	Florian Güldenpfennig	Susanna Nilsson	Helena Tobiasson
Debjanee Barua	Karen Henriksen	Tim Nugent	Martin Tomitsch
Mark Billingham	Luke Hespanhol	Piia Nurkka	Keith Unsworth
David Brown	Seamus Hickey	Kenton O'Hara	Keith Vander Linden
George Buchanan	Xavier Ho	David O'Hare	Nicholas Vanderschantz
Paris Buttfield-Addison	Zaana Howard	Jeni Paay	Frank Vetere
Marina Buzzi	Andrew Johnston	Helen Partridge	Greg Wadley
Maria Claudia Buzzi	Syahrul Junaini	Jon Pearce	Tony Wang
Paul Calder	Doris Jung	Sonja Pedell	Jenny Waycott
Linda Candy	Rohit Ashok Khot	Abdul Moiz Penkar	Gerald Weber
Siyuan Chen	Khamsum Kinley	Bernd Ploderer	Michael Weber
Aaron Chen	Lone Koefoed Hansen	Vesna Popovic	Ian Welch
Caslon Chua	Henrik Korsgaard	Peter Purgathofer	Christoph Wimmer
Andrew Clayphan	Lars Kulik	Kenneth Radke	Brett Wilkinson
Nathalie Colineau	Tobias Langlotz	Patrick Rau	Nicholas Wittison
Karin Coninx	Geehyuk Lee	Fiona Redhead	Chui Yin Wong
Sally Jo Cunningham	Hyowon Lee	Toni Robertson	Clinton Woodward
Xianghua Ding	Tuck Wah Leong	Christine Satchell	Burkhard Wuensche
Matthew D'Orazio	Chun-Cheng Lin	Jennifer Seevinck	Theodor Wyeld
Claire Dormann	Christopher Lueg	Haifeng Shen	Lonce Wyse
Wendy Doube	Martin Luerssen	Hirohito Shibata	Hiroaki Yano
John Downs	Christof Lutteroth	Simeon Simoff	
Andreas Duenser	Peter Lyle	Petr Slovak	
Kirsten Ellis	John Manning	Ross Smith	
Ulrich Engelke	Evi Indriasari Mansor	Wei Song	
Viv Farrell	Roberto Martinez-Maldonado	Fabius Steinberger	
Graham Farrell	Kevin McGee	Duncan Stevenson	
Eric Fassbender	Dana Mckay	Ozge Subasi	
Zac Fitz-Walter	Richard Medland		
Marcus Foth	Alejandra Mery Keitel		
Jill Freyne	Seyed Hadi Mirisae		
	Johannes Mueller		