

IEEE 2017 International Symposium on Technology & Society (ISTAS 2017)
From Good Ideas to Practical Solutions
10 - 11 August 2017, The Sydney Boulevard Hotel, Sydney, NSW, Australia

Programme as at 08 August 2017, Subject to change

Thursday 10 August 2017

09:00	<i>Welcome</i> Paul Cunningham, SSIT President (2017 - 2018)
09:15	<i>Humans, Machines, and Work: The Future is Now</i> Moshe Vardi, George Distinguished Service Professor in Computational Engineering and Director of the Ken Kennedy Institute for Information Technology, Rice University, United States
09:45	<i>Bringing Technology Benefits to All: Opportunities and Challenges Panel</i> <i>Panelists include:</i> Paul Cunningham, IIMC, Ireland / SSIT President (2017 - 2018) Dr. Kathleen A. Kramer, Professor of Electrical Engineering, University of San Diego, United States; and 2016-17 Director of IEEE Region 6 (Western USA) Prof. San Murugesan, Director, BRITE Professional Services; Editor-in-Chief, IEEE IT Professional; Adjunct Professor, Western Sydney University
10:30	Coffee Break & Networking
11:00	Build Environment <i>Chair: Lyria Bennett Moses, University of New South Wales, Australia</i> <i>Smart CITY Patterns: Creating Environmental Stylesheets to Template 'inclusivity' on Cardiff Bay Barrage</i> Fiona Carroll, University of South Wales, United Kingdom <i>An Empirical Analysis of Mobile Broadband Adoption</i> Sobee Shinohara, KDDI Research, Japan <i>Urban Flood Modelling Using Geo-social Intelligence</i> Katina Michael, University of Wollongong, Australia <i>A Theory of Exposure: Measuring Technology System End User Vulnerabilities</i> Lindsay Robertson, University of Wollongong, Australia
12:30	Lunch & Networking

13:30	<p>Trust Chair: Philip Chmielewski, Loyola Marymount University, United States</p> <p><i>Dangerous Algorithms</i> Lyria Bennett Moses, University of New South Wales, Australia</p> <p><i>The Issue of User Trust in Decentralized Applications Running on Blockchain Platforms</i> Vanessa Bracamonte, NII, Japan</p> <p><i>Designing and Evaluating Two Interventions to Improve Identity Theft Recovery Outcomes</i> Sigi Goode, Australian National University, Australia</p> <p><i>Human Behaviour in Online Social Networks</i> Joshua Gillen, University of Wollongong, Australia</p> <p><i>A Model of Socio-technical Systems Enhancing Creativity</i> Wornchanok Chaiyasoonthorn, King Mongkut's Institute of Technology Ladkrabang, Thailand</p> <p><i>The Big Data Analytics for National Security: the Epistemological Challenge</i> Lucy Resnyansky, Defence Science and Technology Group, Australia</p>
15:30	Coffee Break & Networking
16:00	<p>Healthy Living & Accessibility Chair: Paul Cunningham, IIMC, Ireland</p> <p><i>Collaboration and co-location: Making Sense of Digital Design for Early Childhood Games</i> Holly Tootell, University of Wollongong, Australia</p> <p><i>Using Information Management systems and processes to support Shared Care for Colorectal Cancer Survivors</i> John Lewis, UNSW, Australia</p> <p><i>Smart-Hat: Safe and Smooth Walking Assistant for Elderly People</i> Celia Shahnaz, Bangladesh University of Engineering & Technology, Bangladesh</p> <p><i>Low-cost Smart Electric Wheelchair with Destination Mapping and Intelligent Control Features</i> Shaikh Anowarul Fattah, Bangladesh University of Engineering & Technology, Bangladesh</p> <p><i>Accessibility Design for Enterprise Touchscreen Printers</i> Cecille Mata Pantonial, Lexmark R&D Corp, Philippines</p>

17:45	<i>Science Diplomacy: A Path for Scientists and Engineers to Make Global Societal Impact</i> Fahmida N. Chowdhury, National Science Foundation, United States
18:15	Close of Day One
19:00 for 19:15	Networking Dinner, Chinatown, Sydney

Friday 11 August 2017

09:00	<i>Robots that Need to Mislead: Biologically-inspired Machine Deception</i> Ron Arkin, Regents' Professor, College of Computing and Director of the Mobile Robot Laboratory, Georgia Tech, United States
09:30	<i>Autonomous Weapons: Impacts beyond Combat and Conscience beyond Poker</i> Philip Chmielewski, Loyola Marymount University, United States
10:00	<i>Technology, Humans, and Enclosure</i> Greg Adamson, University of Melbourne, Australia
10:30	Coffee Break & Networking
11:00	Ethics & Policy Chair: Greg Adamson, University of Melbourne, Australia <i>Human-Robotics/AI Interaction (HR(AI))</i> Morgan Broman & Pamela Finckenberg-Broman, Griffith University, Australia <i>Redesigning the Circuit Layouts Act 1989 (Cth) in anticipation of maker or remix culture and 3d printing of circuit boards</i> Thomas Green, University of Wollongong, Australia <i>Data: Friend or Foe</i> Anthony Nolan, G3N1U5, Australia
12:00	Lunch & Networking
13:15	Women Empowerment through Engagement in Activities impacting Society and Humanity Panel <i>Panelists include:</i> Dr Celia Shahnaz, BUET, Bangladesh, Co-chair, IEEE WIE Workshops Subcommittee and Member, IEEE SSIT WIE Subcommittee (<i>Moderator</i>) Dr Bozena Pasik-Duncan, University of Kansas, United States / Chair, IEEE WIE Sainab Taiwo Ninalowo, ComEd, USA and Chair, IEEE PES Women in Power

	<p>Dr Takoi K Hamrita, University of Georgia USA and IEEE WIE Liason to IEEE USA</p> <p>Narelle Clark, ACCAN, Australia</p> <p>Dr Fahmida Chowdury, National Science Foundation, USA</p> <p>Prof. Katina Michael, University of Wollongong, Australia</p> <p>Dr Ramalatha Marimuthu, Chair, IEEE SSIT WIE Subcommittee</p>
14:15	<p>Closing Panel – Trust and Social Implications of Technology</p> <p><i>Chair: Paul Cunningham, IIMC, Ireland</i></p> <p><i>Panelists include:</i></p> <p>Susan M. Brooks, Executive Director, IEEE Communications Society</p> <p>Gordon Day, IEEE President 2012</p> <p>Russ Harrison, Director, Government Relations, IEEE-USA</p> <p>John Lewis, UNSW, Australia</p> <p>Prof. Pradeep Kumar Ray, University of Michigan Joint Institute, Shanghai Jiao Tong University, China</p> <p>Brian Traynor, Mount Royal University, Canada and IEEE Professional Communication Society</p> <p>Jeff Voas, IEEE Reliability Society, United States</p>
15:30	SSIT Community Meeting
16:30	Close of Event

Featured Speakers & Panelists - Biographies & Abstracts

Thursday 10 August 2017



Humans, Machines, and Work: The Future is Now

Dr Moshe Y. Vardi, FIEEE, George Distinguished Service Professor in Computational Engineering and Director of the Ken Kennedy Institute for Information Technology, Rice University, United States

Dr Vardi is the recipient of the ACM SIGACT Goedel Prize, ACM Kanellakis Award, ACM SIGMOD Codd Award, Blaise Pascal Medal, IEEE Computer Society Goode Award, and EATCS Distinguished Achievements Award. He is the author and co-author of over 500 papers and two books. He is a fellow of several societies, and a member of several academies, including US National Academy of Engineering and National Academy of Science. He holds honorary doctorates from Saarland University in Germany, Orleans University in France, UFRGS in Brazil, and University of Liege in Belgium. He is also the Senior Editor of the Communications of the ACM.

Abstract

Automation, driven by technological progress, has been increasing inexorably for the past several decades. Two schools of economic thinking have for many years been engaged in a debate about the potential effects of automation on jobs: will new technology spawn mass unemployment, as the robots take jobs away from humans? Or will the jobs robots take over create demand for new human jobs?

I will present data that demonstrate that the concerns about automation are valid. In fact, technology has been hurting working Americans for the past 40 years. The discussion about humans, machines and work tends to be a discussion about some undetermined point in the far future. But it is time to face reality. The future is now.

Bringing Technology Benefits to All: Opportunities and Challenges Panel



Paul M Cunningham is President & CEO of International Information Management Corporation, Founder & Director of IST-Africa Institute (www.IST-Africa.org), Founder & Coordinator of mHealth4frika (www.mHealth4Afrika.eu) and a Visiting Senior Fellow at Wrexham Glyndŵr University (Social Implications of Technology and ESDGC - Education for Sustainable Development & Global Citizenship). Paul works internationally as a technology, strategy, and policy expert.

An IEEE Senior Member, Paul is 2017 - 2018 President, IEEE Society on Social Implications of Technology (SSIT); Projects Chair, IEEE Humanitarian Activities Committee (HAC); Member, IEEE Technical Activities Board (TAB) and IEEE Global Public Policy Committee (GPPC); Founder and Chair, IEEE SSIT IST-Africa SIGHT.

Paul is a graduate of Trinity College Dublin and UCD Michael Smurfit Graduate Business School; has studied at postgraduate level in Hungary and USA; and is completing a PhD at Department of Computer and Systems Sciences (DSV), Stockholm University.



Dr. Kathleen A. Kramer is a Professor of Electrical Engineering at the University of San Diego. Professionally, she is driven by a passion of “advancing technology for humanity on many fronts” and, educationally, her enthusiasm is to educate the “complete engineer”. She received the B.S. degree in electrical engineering magna cum laude with a second major in physics from Loyola Marymount University, and M.S. and Ph.D. degrees in electrical engineering from the California Institute of Technology. At the University of San Diego, she served as Director from 2004-2013 and teaches in an engineering program where all undergraduate engineering degrees are dual bachelor of arts & bachelor of science degrees with liberal arts and engineering components.

She is the 2016-17 Director of IEEE Region 6 (Western USA), responsible for developing and supporting technical, educational, professional and humanitarian activities in the region. She is a member of the board of IEEE and of IEEE-USA. She is an IEEE member of the Engineering Accreditation Commission of ABET. She is a Vice-President of IEEE Aerospace & Electronics Systems Society and chairs the society’s Technical Panel on Cyber Security.

She has also been a Member of Technical Staff at several companies, including ViaSat, Hewlett Packard, and Bell Communications Research. She is the author or co-author of over 100 publications, carrying out research in the areas of multisensor data fusion, intelligent systems, information assurance and neural and fuzzy systems.



Prof. San Murugesan is Editor in Chief of IEEE *IT Professional*; Director of BRITE Professional Services, Sydney; and adjunct professor at Western Sydney University, Australia. He is also a corporate trainer and a former Senior Research Fellow of the US National Research Council. His areas of current interests includes the Internet of Things, cloud computing, green IT, smart systems, IT for Emerging Regions, and technology and society. He is co-editor of [*Encyclopedia of Cloud Computing*](#) (Wiley, June 2016) and [*Harnessing Green IT: Principles and Practices*](#) (John Wiley, 2012).

Dr Murugesan is Chair of Educational Products Committee of the IEEE CS Professional Educational Activities Board and Advisory Board Member of IEEE Computer Software and Applications Conference (COMPSAC). He is a Fellow of the Australian Computer Society and a Fellow of IETE.

Science Diplomacy: A Path for Scientists and Engineers to Make Global Societal Impacts



Dr. Fahmida N. Chowdhury is a Program Director in the Office of International Science and Engineering (OISE) at the US National Science Foundation (NSF). Prior to joining NSF in 2008, she was a Professor of Electrical and Computer Engineering at the University of Louisiana, Lafayette, LA, USA, where she held the W. Hansen Hall and Mary O. Hall Endowed Chair in Computer Engineering.

Dr. Chowdhury has been active in IEEE for many years; she served on the editorial boards of two IEEE Transactions: on Control Systems Technology and on Neural Networks. She has served as an elected member of the IEEE Control System Society's Board of Governors, and also on the IEEE Computational Intelligence Society's AdCOM. Her research interests include complex systems modeling and analysis, non-traditional applications of dynamic systems theory, and detection of abnormal conditions (faults) in dynamic systems. She was a Fulbright Scholar in 2001, a Visiting Professor at the Helsinki University of Technology (Finland) in 2004, and a US State Department Embassy Science Fellow in 2013. She has deep interest in international science, technology and educational collaborations, science diplomacy, and serving society through humanitarian technologies and policy-level engagements.

Abstract

The term “Science Diplomacy” is used in many different ways in different contexts, but in a broad sense it can be taken as an approach where international scientific collaboration is used not only to advance science and technology but also to build partnerships across nations and countries. Such partnerships may have societal impacts beyond the immediate scope of the science or technology involved, and may help remove barriers to further scientific or developmental cooperation among nations. Although scientists and engineers do not typically choose to become career diplomats or work in government administration, they can contribute significantly toward societal benefits by accepting and embracing such non-traditional roles if appropriate opportunities arise. This keynote presentation makes a case for scientists and engineers to explore the concept of science diplomacy as a mechanism for contributing to society.

Friday 11 August 2017

Robots that Need to Mislead: Biologically-inspired Machine Deception



Dr Ron Arkin, FIEEE, Regents’ Professor, College of Computing and Director of the Mobile Robot Laboratory, Georgia Tech, United States

Professor Arkin is the recipient of several awards, including the Outstanding Senior Faculty Research Award (College of Computing at Georgia Tech), and Outstanding Achievement in Research Award (University of Massachusetts Computer Science Department). He has also served as Associate Dean for Research

and Space Planning in the College of Computing at Georgia Tech since October 2008; a STINT visiting Professor at the Centre for Autonomous Systems at the Royal Institute of Technology (KTH) in Stockholm, Sweden; held a Sabbatical Chair at the Sony Intelligence Dynamics Laboratory in Tokyo, Japan, and served as a member of the Robotics and Artificial Intelligence Group at LAAS/CNRS in Toulouse, France.

His research interests include behavior-based reactive control and action-oriented perception for mobile robots and unmanned aerial vehicles, hybrid deliberative/reactive software architectures, robot survivability, multi-agent robotic systems, bio-robotics, human-robot interaction, robot ethics, and learning in autonomous systems. He has over 170 technical publications in these areas, and also written several text books.

Prof. Arkin serves/served as an Associate Editor for IEEE Intelligent Systems, International Journal of Social Robots, and the Journal of Environmentally Conscious Manufacturing, as a member of the Editorial Boards of Autonomous Robots, Machine Intelligence and Robotic Control, Journal of Intelligent Service Robotics, Journal of Field Robotics, International Journal of Advanced Robotic Systems, and the Journal of Applied Intelligence, and is the Series Editor for the MIT Press book series Intelligent Robotics and Autonomous Agents.

Prof. Arkin has served on the IEEE SSIT Board of Governors (2010-2012), the Administrative Committee of the IEEE Robotics and Automation Society (1999-2004), as a founding co-chair of the IEEE RAS Technical Committee on Robot Ethics (2004-2009), co-chair of the Society's Human Rights and Ethics Committee (2006-2011), and also served on the National Science Foundation's Robotics Council (2001-2002). He holds a B.S. Degree from the University of Michigan, an M.S. Degree from Stevens Institute of Technology, and a Ph.D. in Computer Science from the University of Massachusetts, Amherst.

Abstract

Expanding our work in understanding the relationships maintained in teams of humans and robots, this talk describes previous and ongoing research on deception and its application within robotic systems. We first explored the use of psychological interdependence theory as the basis for producing deceit in robotic systems in order to evade capture. Subsequent work involved studying squirrel hoarding and bird mobbing behavior as it applies to deception, in the first case for misleading a predator, and in the second for feigning strength when none exists. Most recently we explore the role of other-oriented deception, used to benefit the mark. Consideration of the significant ethical implications of this research area is presented.

Autonomous Weapons: Impacts beyond Combat and Conscience beyond Poker



Dr. Philip Chmielewski, Professor and Sir Thomas More Chair of Engineering Ethics, Seaver College of Science and Engineering, Loyola Marymount University, United States

As the Sir Thomas More Chair of engineering ethics at the Seaver College of Science and Engineering of Loyola Marymount University (Los Angeles), Chmielewski offers instruction in the ethics of design and production, research ethics, and the ethical

assessment of contemporary technologies. His own research focuses on developing elements of a framework for international engineering ethics. He is a member of IEEE and of the Association of Asian Studies. Further, he is an affiliate member of ASME and the Hong Kong Institution of Engineers. Until recently he has been on sabbatical at the Centre for China Studies of the Chinese University of Hong Kong. He has lectured frequently in mainland China.

Abstract

Autonomous weapons systems (AWS) used in offensive combat should be subject to further ethical evaluation. What is the impact of the use of AWS on the society that deploys these combat devices? How does the use of AWS alter the operators' bearing toward the world, targeted and environmental. How can non-western values be drawn upon to contribute to the assessment of AWS from an international perspective?

This presentation will make use of, respectively, social critic Jean Baudrillard's distinction between intelligence and thought, electrical engineer Gene Moriarty's tripartite assessment of material ethics; and the Chinese thinker as well as social, military, and professional leader Wang Yangming's (王阳明) grasp of the relation between knowledge and action mediated through conscience (良知).

Wang Yangming was a highly significant and effective public official; both his thought and work, then, can help form a global understanding of the practicing professional engineer's obligation to the public.

The presentation, thus, seeks to assess ethically, in terms of society, of lifeworld, and of decision-making, the operation of AWS.

Technology, Humans, and Enclosure



Dr. Greg Adamson, Associate Professor, Department of Electrical & Electronic Engineering, The University of Melbourne, Melbourne VIC, Australia and 2015-2016 President, IEEE-SSIT

Dr Greg Adamson is the Past-President of IEEE's Social Implications of Technology, a risk manager in the financial services industry, and an Associate Professor at the University of Melbourne School of Engineering. He is Chair of the IEEE Board of Directors Ad Hoc Committee on Ethics. He also chairs the IEEE Special Interest Group in Blockchain. His research interests are: barriers to socially beneficial technology; Norbert Wiener, a founder of cybernetics and information ethics; and engineering motivation. He initiated the IEEE conference series Norbert Wiener in the 21st Century (Boston 2014, Melbourne 2016). He consults in blockchain, cyber security, and professional ethics.

Abstract

Technology preceded the rise of homo sapiens, and is therefore part of human existence. Since the industrial revolution, the relationship between technology and society has increasingly defined the world in which we live. This can be seen in two "enclosures", which can be dated to the late 19th and late 20th centuries.

The first of these relates to the concept of “wilderness”. Prior to the mid-19th century, wilderness was “frontier”. Preserving wilderness had little meaning as environmental wilderness was the predominant state of much of the world. With the extension of development, writers including Walt Whitman drew attention to the need to protect or lose that wilderness. For the past century, we have lived in a world in which, where environmental wilderness exists, it is due to a decision to protect rather than to destroy it.

The second “enclosure” relates to privacy. Throughout human history the choice to “invade” privacy has been one undertaken by organizations such as governments on the basis of finite monitoring resources. By the end of the 20th century the question changed from “why monitor” a particular subject to “why not monitor” all subjects, as monitoring sensors became ubiquitous. Today those areas where privacy is protected (such as the voting booth) are those where we choose (by law or other convention) not to monitor. In this sense, privacy is like environmental wilderness, something that may exist when we choose to protect it.

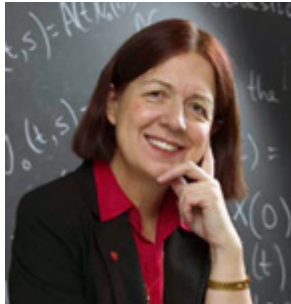
In the 21st century we can anticipate the falling of another frontier, the mind. It is now possible for devices to read (limited, deliberate) intention and drive machines that move physical objects based on thought. Now, one-way signal monitoring is being replaced with two-way feedback. Gamers attach electrodes to their foreheads to improve the intensity of their gaming experience. For several years research has been underway seeking to place ideas into people’s heads through feedback enforcing electronic devices. By the end of this century we may reach a point where brain interface technology can be used for both determining complex thoughts and for inputting thoughts (eg for language training). If this becomes possible, then we will be faced with a further set of choices: what should be modified in the mind, and what, if anything, should be left alone.

Women Empowerment through Engagement in Activities Impacting Society and Humanity Panel



Dr Celia Shahnaz, SMIEEE, Fellow IEB, received Ph.D. degree, Concordia University, Canada, 2009 and currently a Professor, BUET, Bangladesh. She has published more than 80 international journal/conference papers. She is a recipient of Canadian Commonwealth Scholarship/Fellowship & BAS gold medal, winner of 2016 IEEE MGA leadership award, 2015 WIE Inspiring Member Award from IEEE WIE & 2013 R10 WIE Professional Volunteer award. She is the mentor, 1st prize winning project (HEALTH FACILITY), IAS CMD Humanitarian Project Contest 2017

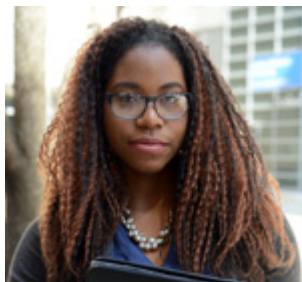
In 2017, she is Communications Chair, IEEE SIGHT steering committee, Co-chair, IEEE WIE workshops subcommittee, IEEE PES WiP R10 Regional representative, member, IEEE SSIT WIE and SIT committees, Vice-Chair (activity)-IEEE BDS, Coordinator-SIGHT group FLASH, General Co-Chair IEEE R10 HTC & IEEE WIECON-ECE, & Chair, WIE track IEEE ANZSCON & Brief Session Speaker, IEEE Sections Congress. She was 2016 R10 WIE Coordinator, General Chair-IEEE WIECON-ECE 2016 & Founder of IEEE WIECON-ECE at 2015.



Dr. Bozenna Pasik-Duncan, FIEEE, Chancellors Club Teaching Professor, Professor of Mathematics and Courtesy Professor of AE & EECS, University of Kansas, United States / Chair, IEEE WIE

Dr Pasik-Duncan is the recipient of many awards, including the IEEE Third Millennium Medal and IEEE CSS Distinguished Member Award, and is an inducted member of the University of Kansas Women's Hall of Fame. She is a Fellow of both IEEE and IFAC, and has served in many capacities in several societies. Her current service

includes Chair of IEEE Women In Engineering Committee, Chair of the AACC Education Committee, Deputy Chair of the CSS TC on Control Education, membership on the IEEE CSS and SSIT Board of Governors, and as a member of the SIAM Activity Group on Systems Theory and Control Conference Steering Committee. She is founder of Women in Control (WIC) and first chair of IEEE CSS Standing Committee on WIC. At the University of Kansas she is founder and faculty advisor of student chapters of AWM and SIAM, founder and coordinator of the Outreach Program, and founder and chair of Stochastic Adaptive Control Seminar. Her research interests are primarily in stochastic systems and stochastic adaptive control, and in STEM education. She holds a Master's degree in Mathematics from the University of Warsaw, and Ph.D. and D.Sc. (Habilitation) degrees from the Warsaw School of Economics, Poland.



Sainab Ninalowo is a Smart Grid Engineer in the Smart Grid and Technology group at ComEd which is charged with developing and implementing innovative technologies and business models for advancing the electric grid. ComEd is an energy delivery subsidiary of Exelon Corporation and one of the largest utilities in the United States, providing service to approximately 3.8 million customers across northern Illinois. Sainab also drives innovation and collaboration as ComEd's regional innovation ambassador. Sainab

was the FY16 VP of Outreach for the Society of Women Engineers- Chicago Regional Section. She oversaw the high school, elementary, scholarship, and collegiate programs. She is currently the chair of PES Women in Power – a global organization creating a movement to promote more diverse leadership in the Power Industry. Sainab graduated with a BS in Mechanical Engineering from Bradley University, and she is currently pursuing an MBA degree in Finance from DePaul University in Chicago.



Dr. Takoi Hamrita is a professor of electrical engineering at the University of Georgia where she has spearheaded the development of two ABET accredited degree programs, one in electrical and the other in computer systems engineering. These efforts have recently culminated into a new UGA school of electrical and computer engineering for which she's serving as inaugural chair.

Takoi has built a decade-long partnership between UGA and the Tunisian ministry of higher education, that has had profound impact both on UGA and Tunisia and has become an innovative model for education and development around the world. The program has earned her numerous prestigious awards

such as the National Medal in Science and Education, and the prestigious Andrew Heiskell Award for Innovation in International Partnerships.

Takoi has served in many leadership roles within IEEE including chair of the industry automation and control committee, Southeast coordinator and IEEE USA liaison for WIE. She is also the founder and chair of the IEEE-WIE Global Women Leadership Summit in Atlanta.



Narelle Clark is Deputy CEO at the Australian Communications Consumer Action Network (ACCAN) the peak body for representing consumers in the Australian telecommunications marketplace. Narelle has over 20 years' experience in network engineering and management positions in telecommunications companies and universities, as well as consulting with state and federal governments, overseas telecommunications providers and non-profits. With a passion for research, Narelle led research in networking technologies at CSIRO and managed SingTel Optus' research program and applies this passion to her stewardship of the ACCAN grants scheme. She recently completed a six year term on the global Internet Society Board of Trustees. Narelle has been active in standards development through the IETF and Standards Australia and sits on the Internet of Things Alliance Australia executive council. Narelle holds a degree in applied physics, a masters in telecommunications engineering a postgraduate diploma in management, and is a senior member of the IEEE.

Dr Fahmida Chowdury, National Science Foundation, USA (see profile above)



Dr Katina Michael is a professor in the School of Computing and Information Technology at the University of Wollongong. She presently holds the position of Associate Dean – International in the Faculty of Engineering and Information Sciences. Katina is the IEEE Technology and Society Magazine editor-in-chief, and IEEE Consumer Electronics Magazine senior editor. Since 2008 she has been a board member of the Australian Privacy Foundation, and until recently was the Vice-Chair. Michael researches on the socio-ethical implications of emerging technologies. She has written and edited six books, guest edited numerous special issue journals on themes related to radio-frequency identification (RFID) tags, supply chain management, location-based services, innovation and surveillance/uberveillance.



Dr Ramalatha Marimuthu, Chair, IEEE SSIT WIE Subcommittee

Dr Ramalatha Marimuthu has been in teaching for 30 years and currently working in Kumaraguru College of Technology. She has a vast experience in motivating and training the students on skill development and peer networking. She organises leadership training workshops, conferences and congresses for training student leaders

and for encouraging entrepreneurship which has resulted in many student start ups. She also guides the students in developing unique solutions for social problems like inclusiveness and accessibility in day to day life for people with special needs. She has received many awards from IEEE, Lions Club, Government of Tamilnadu, India and Anita Borg Institute for Women and Technology, California for effecting positive changes in community through technology. She has delivered lectures on assistive technology in universities and conferences all over the world and in Google, Mountainview and Pacific Northwest National Laboratory, Richland. Her areas of interest are assistive technology, women empowerment and effective education.

Closing Panel – Trust and Social Implications of Technology



Susan M. Brooks, Executive Director, IEEE Communications Society

Susan has been the IEEE Communications Society Executive Director since September 2014. She leads the Society's 25 staff members and has oversight of the Society's 17M annual budget (which includes over 75 conferences per year). In collaboration with her volunteers, she and her staff have supported successful partnerships with National Instruments and the OpenFog consortium, over fifteen 5G Summits, and the IEEE Green ICT and 5G initiatives.

In addition to holding a B.A. in English and a second B.A. with a double major in Advertising and Communication, all from Michigan State University, Susan earned her Master's degree in Organizational Management from the University of Phoenix. She completed the Duke University Fuqua School of Business Advanced Management Program and AT&T's Advanced Management Program.



Gordon Day, IEEE President 2012

Gordon Day spent 33 years at the National Institute of Standards and Technology, where he founded and led the Optoelectronics Division and conducted research on fundamental optical metrology, optoelectronic instrumentation, and standards for optical fiber. He later served as an adviser to U.S. Senator Jay Rockefeller and as Director of Government Relations for the Optoelectronics Industry Development Association. Day was IEEE's 50th President. He currently chairs its Global Public Policy Committee and contributes to its work in Europe and Africa. Previously he served as the President of the IEEE Photonics Society and of IEEE-USA. He has held visiting or adjunct positions at the University of Southampton, the University of Sydney, the University of Colorado, and the Colorado School of Mines. He is a Fellow of IEEE, OSA, AAAS, IoP, and IET. He received the B.S., M.S., and Ph.D. degrees from the University of Illinois, Urbana-Champaign, in Electrical Engineering.

Russ Harrison, Director, Government Relations, IEEE-USA

John Lewis, UNSW, Australia



Prof Pradeep Ray is the Director of the Centre For Entrepreneurship at the University of Michigan Joint Institute in Shanghai Jiao Tong University, China. He is a member of the International Academic Committee of Shanghai Entrepreneurship Research Centre at Shanghai Jiao Tong University. He has been awarded Shanghai 1000-talent Distinguished Professor status. He is also a Professor in the Engineering Research Centre for Digital Medicine at Shanghai Jiao Tong University. He has been founder of the WHO Collaborating Centre on eHealth at the University of New South Wales (UNSW)-Australia. The highly cited work by APuHC on mHealth Bangladesh led to the formation of the [UNSW Yunus Social Business Hub for Health](#), the first of its kind in Australia. He has been an IEEE Distinguished Lecturer on eHealth (since 2014). He has been a founder and a Chair of IEEE eHealth Technical Committee (2009-2013) and the founder of IEEE Healthcom (since 1999).



Brian Traynor, Mount Royal University, Canada and Treasurer, IEEE Professional Communication Society

Brian Traynor is an Associate Professor in the Information Design program in the Faculty of Business and Communication Studies at Mount Royal University. Courses taught include: Information Architecture, Usability, and Project and Content Management. Brian has research interests in user satisfaction measures and the attribution of blame by users. He is also a Canadian delegate on behalf of the Standards Council of Canada contributing to the ISO/IEEE/IEC Systems and Software Engineering Working Group 2 (Software Documentation) Brian has been an IEEE member since 2006 and has been actively involved in the IEEE Professional Communication Society since 2012. He is the PCS Treasurer and has supported the annual ProComm conference in a variety of roles over several years.



Jeff Voas, 2017 President, IEEE Reliability Society

Jeffrey Voas is currently a computer scientist at the US National Institute of Standards and Technology (NIST) in Gaithersburg, MD. Before joining NIST, Voas was an entrepreneur and co-founded Cigital that is now a part of Synopsys (Nasdaq: SNPS). He has served as the IEEE Reliability Society President (2003-2005, 2009-2010, 2017), and served as an IEEE Director (2011-2012). Voas co-authored two John Wiley books (Software Assessment: Reliability, Safety, and Testability [1995] and Software Fault Injection: Inoculating Software Against Errors [1998]). Voas received his undergraduate degree in computer engineering from Tulane University (1985), and received his M.S. and Ph.D. in computer science from the College of William and Mary (1986, 1990 respectively). Voas is a Fellow of the IEEE, member of Eta Kappa Nu, Fellow of the Institution of Engineering and Technology (IET), and Fellow of the American Association for the Advancement of Science (AAAS).