



IEEE Future Directions Event



IEEE

TECHNOLOGY TIME MACHINE

Making the Future

20-21 October 2016 | San Diego, CA, USA

The only way to discover the limits of the possible is to go beyond them into the impossible. –Arthur C. Clarke

Are you ready to set your eyes on the future and explore the reality of the impossible?

[Register now](#) for the IEEE Technology Time Machine (TTM), IEEE's flagship symposium on future technology directions. For inquiries, please contact ttminfo@ieee.org.

Making the Future

The overall theme of TTM 2016 is *Making the Future*. Building upon IEEE's major technology initiatives, TTM 2016 will bring together high level renowned experts from research and industry to provide an overview of future technologies based on their research, products, and services. Keynote speakers and panelists will provide the participants with knowledge of the technologies so they can plan for the future, while recognizing possible immediate applications for today. This event is geared for top executives, key decision makers, industry leaders, technologists, government officials, scientific innovators, economists, and social policy makers.

Excellent Location

IEEE TTM 2016 will be held at the **Hilton San Diego Resort & Spa in San Diego, CA, USA**. Situated on the beautiful sands of Mission Bay, the Hilton San Diego is centrally located to all of the area's top attractions.



Topics and Panels

- Big Data
- Brain
- Cybersecurity
- Internet of Things (IoT)
- Rebooting Computing
- Women Making the Future
- Technology Super Stars
- Young Entrepreneurs

Keynote Speakers



Alicia Abella
AVP, AT&T, Cloud
Technologies and
Services Research
Organization



Sherry Turkle
Abby Rockefeller Mauzé
Professor of the Social
Studies of Science and
Technology in the
Program of Science,
Technology, and Society
at MIT

the institute

The IEEE news source

The fourth Technology Time Machine conference includes sessions on big data, cybersecurity, the Internet of Things, the cloud, the brain, and rebooting computing, as well as a presentation on women's roles in making the future.

There are two keynote speakers. Sherry Turkle, professor of the social studies of science and technology at MIT, plans to discuss how our relationship with technology affects our other relationships. Alicia Abella, an AT&T assistant vice president of cloud technologies and services for the company's research organization, is set to discuss some AT&T projects in the works.

Under the theme "Making the Future," organizers say, the conference will focus on the fact that the future is already here. That is, TTM will deal not just with what's likely to happen but also with how future events can affect what we are doing today.

The San Diego Section is heavily involved with organizing the conference. IEEE Senior Member Tom Coughlin, director of Region 6 and a member of the TTM program committee, notes that young entrepreneurial professionals will talk about their projects during a dinner session on 21 October.

The conference is expected to draw about 300 people including industry leaders, technologists, government officials, economists, and social policymakers.

"These will not be people doing hands-on product development for today, but who are more involved with the future of product development, marketing, and research," says Doug Zuckerman, the conference's general chair.

And notes IEEE Fellow Elie Track, "IEEE is an important catalyst to bring together attendees and institutions that may not otherwise share information openly. TTM provides a unique opportunity to take a peek at the future."

From *The Institute, The IEEE News Source*, 4 August 2016, Ivan Berger.

Program

Day 1 – Thursday, 20 October 2016

Time	Session
8:30 am – 9 am	Opening remarks – Karen Bartleson , 2016 IEEE President-elect
9 am – 10 am	Keynote – Alicia Abella , AVP, AT&T
10 am – 10:30 am	Break
10:30 am – 12 pm	Panel on Women in Making the Future Alicia Abella , AVP, AT&T, moderator Kathy Herring Hayashi , Qualcomm Tamara Clay , Hyperloop One Meredith Perry , Founder & CEO, uBeam “Chuck” (Charlene) Walrad , Managing Director, Davenport Consulting
12 pm – 1 pm	Lunch
1 pm – 2:30 pm	Rebooting Computing Tom Conte , Rebooting Computing Initiative Co-Chair, Georgia Tech Paolo Gargini , ITRS 2.0/IRDS Chair Robert Voigt , Northrop Grumman Stan Williams , ICRC 2016 General Chair, HP Enterprise
2:30 pm – 3 pm	Break
3 pm – 4:30 pm	Internet of Things (IoT) Roberto Minerva , Chair IEEE IoT Initiative, Telecom Italia, moderator Clint Andrews , Rutgers Center for Green Building Antonio Skarmeta , University of Murcia, Spain Jeffrey Voas , National Institute of Standards and Technology Yen-Kuang Chen , Intel Corporation
4:30 pm – 6 pm	Big Data Jon Rokne , Professor, University of Calgary, moderator AJ Bubb , Technologist, Accenture Ritu Chadha , Senior Research Director at Applied Communication Sciences, or Vencore Labs Joe Weinman , Author, Cludonomics and Digital Disciplines
6:30 pm on...	Dinner and Young Entrepreneurial Professionals / Lightning Talks Session Meredith Perry , Founder & CEO, uBeam

From paper, to tablets, to smart glasses, and now the huge push towards Augmented and Virtual Reality, emerging technologies like smart glasses are improving everything from the effectiveness of on the job training to enabling workers to perform at, or even above their level, while still reducing downtime, improving accuracy, and maximizing efficiency. From “[Field Force 2.0: The Rise of the Connected Worker](#),” Wearable Tech, 16 May 2016, by AJ Bubb, TTM Big Data speaker.

Day 2 – Friday, 21 October 2016

Time	Session
8:30 am – 9 am	Recap of Day 1 – Roberto Saracco , President of EIT ICTLABS Italy, IEEE Future Directions Chair
9 am – 10 am	Keynote – Sherry Turkle , Professor, MIT, and Director of the MIT Initiative on Technology and Self
10 am – 10:30 am	Break
10:30 am – 12 pm	Cybersecurity Matt Stamper , CISO CyberFlow Analytics, moderator Upkar Dhaliwal , CEO and Founder, Future Wireless Technologies, moderator Winnie Callahan , Founding Director, University of San Diego Center for Cyber Security Engineering and Technology Tom Caldwell , CEO CyberFlow Analytics Gary Hayslip , CISO City of San Diego David Dodd , Vice President for Information Technology and Chief Information Officer of the Stevens Institute of Technology
12 pm – 1 pm	Lunch: The Future of Technical Content, Norman Shaw
1 pm – 2:30 pm	Brain Paul Sajda , Professor, Columbia University, moderator Jack Gallant , Chancellor's Professor, UC Berkeley James R. Kozloski , Ph. D., IBM Research Division Jan Rabaey , Ph. D., Professor, UC Berkeley
2:30 pm – 3 pm	Break
3 pm – 4:30 pm	Tech Super Stars Panel on Making the Future Celia Desmond , Lead Project Manager at Echologics and Owner, World Class – Telecommunications, moderator. Marc Bracken , M.A.Sc., P.Eng., Vice President and General Manager, Echologics, LLC. Vincent Chan , Professor, MIT Stu Elby , Senior Vice President, Data Center Business Group at Infinera Corporation Joe Herkert , D.Sc., Visiting Scholar at the Genetic Engineering and Society Center, North Carolina State University Karen Bartleson , 2016 IEEE President-elect
4:30 pm – 5 pm	Closing Remarks

Secure IoT ecosystems require new identity management solutions to cope with new challenges due to the inherent nature and requirements of IoT, where the identities of a huge amount of heterogeneous smart objects need to be managed. Current proposed solutions need to be adapted to the envisioned scenarios allowing more flexible sharing models, as well as volatile and dynamic security associations between entities, while privacy is still preserved, keeping data minimization and unlinkability as main concerns. From "[Security in IoT Based on Smart Object Identities](#)," IoT Evolution, 16 August 2016, by Antonio Skarmeta, TTM IoT Panel Speaker.

Speakers

[Read more](#) about our accomplished and dynamic speakers [here](#).



Alicia Abella
Keynote Speaker,
AVP, AT&T



Clint Andrews
Professor, Rutgers
University



Karen Bartleson
2016 IEEE President-
elect



Marc Bracken
VP and GM, Echologics,
LLC.



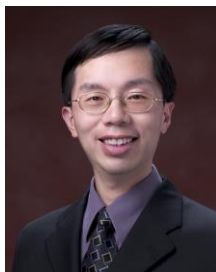
AJ Bubb
US lead for Accenture's
Wearables and IoT



Ritu Chadha
Senior Research Director,
Applied Communication
Sciences, Vencore Labs



Vincent Chan
Senior Research Director,
Applied Communication
Sciences, or Vencore Labs



Yen-Kuang Chen
Principal Engineer at
Intel Corporation



Tom Conte
Professor, Georgia
Institute of Technology



Celia Desmond
Lead Project Manager,
Echologics, Owner,
World Class
Telecommunications



Upkar Dhaliwal
Parallel Entrepreneur and
Wireless Technology
Expert on Mobility



David Dodd
VP for IT and CIO,
Stevens Institute of
Technology



Stu Elby
Senior Vice President,
Infinera Corporation



Jack Gallant
Chancellor's Professor of
Psychology, University
of California Berkeley



Paulo Gargini
Chairman of the IEEE
International Roadmap
for Devices and
Systems



**Kathy Herring
Hayashi**
Senior Staff Engineer,
Qualcomm



Gary Hayslip
Deputy Director, CISO,
City of San Diego



Joe Herkert
Visiting Scholar, North
Carolina State
University



James R. Kozloski
Research Staff Member,
IBM Research Division,



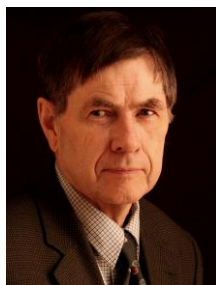
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IEEE IoT Initiative
Chair, Telecom Italia



Meredith Perry
Founder and CEO, uBeam



Jan Rabaey
Professor, University of
California Berkeley



Jon Rokne
Professor, University of
Calgary



Paul Sajda
Professor, Columbia
University



Roberto Saracco
President of EIT
ICTLABS Italy and Italy
Node Director of EIT
Digital, IEEE Future
Directions Chair



Norman Shaw
Director of Product and
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IEEE Standards Assoc.



Antonio Skarmeta
Professor Computer
Science, University of
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Sherry Turkle
Keynote Speaker, Abby
Rockefeller Mauzé, MIT



Jeffrey Voas
Computer Scientist,
National Institute of
Standards and
Technology



Bob Voigt
Northrop Grumman
Fellow



**Charlene "Chuck"
Walrad**
Chair, Professional
Activities Board, IT
Committee IEEE
Computer Society



Joe Weinman
Author, Cloudonomics and
Digital Disciplines



Stan Williams
Senior Fellow and at
Hewlett- Packard
Enterprise Labs

Panel Abstracts

Women Making the Future: Making the Future through Innovation and Passion

Abstract: Moderated by Dr. Alicia Abella of AT&T, this panel comprises a dynamic set of women who are pioneers and innovators in their fields, which include extensive experience in semiconductor software, wireless power, transportation, and software engineering. The panel's diversity will provide unique and varied perspectives based on their industries, roles, and career background. Their lively discussion will reveal their vision of advances expected in technology in the next 30 years and how to capitalize on and evolve with these innovations.

IoT: Expected and Foreseen Deployment and Impacts of the IoT in 5-20 Years

Abstract: A panel of experts in the Internet of Things (IoT) discusses the expected reality of IoT deployment in the next five-to-ten years and presents their foresight on the world with IoT in 20 years' time. The IoT paradigm will be completely embedded in our daily lives in the next 5-10 years, covering scenarios in home and office and throughout most economic sectors like manufacturing and agriculture. In the next 10 years, distributed and collaborative intelligence will be embedded into a vast array of objects; these things will be able to autonomously take actions: cars that can drive themselves; cameras that can record suspicious events and alert users. More things will inter-work, thus being able to 'know' humans and environments; for example, the autonomous driving car not only can drive itself so as not to collide with other cars but also can consider traffic conditions and take a proper route to minimize travel time. The potential exists for exposure of formerly private personal behaviors, loss of privacy or trade secrets, and vulnerability to cyber-disruptions. Security and privacy related to design of smart objects needs to be considered at the front end of design and will require an infrastructure focused on interoperability and plug-and-play. The cross-fertilization of security or privacy with sensing and autonomous actions is the grandest of challenges for IoT going forward.

Big Data: Considering the Future of Big Data and Analytics Given the Expected Increase in Size and Source of the Data

Abstract: The Big Data session includes a diverse panel from industry and academia expert in the areas of IoT, wearables, healthcare, telecom, cloud computing, and computer analytics. The panelists will look toward the next few decades and how big data will continue to be gathered, filtered, and analyzed to provide competitive advantage, support decision making, and provide value while addressing the associated security and privacy issues. The panel brings a wide and varied perspective that will address how ubiquitous and pervasive big data will be and how current techniques for analysis will need to be even more discerning in order to evaluate the large data sets expected.

Tech Superstars on Making the Future: Tech Superstars Discuss Future Widespread Impacts from Innovations in Technology

Abstract: What do you get when you combine experts in the water industry, communications and networks, data center operations, and engineering ethics? The Tech Superstar Panel, featuring an animated discussion by renowned authorities about expectations and applications of future technologies. The panel will use their vast experience to predict how the future will look based on extensive changes in technology expected in the next 30 years.

Brain: The Future of Brain-machine Interfaces: From Technological Challenges to Philosophical Consequences

Abstract: Reading brain activity in order to develop communication interfaces with machines is moving from science fiction to reality. Brain machine interfaces (BMIs) are being developed which can decode mental imagery, map semantics and context, recognize intent for control of prosthetics and provide new therapeutic treatments for disease and disability. What does the future hold for BMIs? There are many technology challenges in developing such BMI systems and making them a practical reality. In addition, there are practical and philosophical consequences that such BMIs have, ranging from providing us with a better understanding of how our brains work, both in health and disease, to what in fact is the underlying circuitry that makes us "human". In this session we will look toward the next few decades to discuss the technology challenges for BMIs as well as their consequences for human health, productivity and the morale and ethical considerations needed for mainstream adoption.

Lunch: The Future of Technical Content

Abstract: Historically, technical content was developed with a specific objective/audience (e.g. a technical journal article or technical standard). With the many changes in how information is disseminated and used, this straight-line approach needs to be reconsidered. What is presented is a new paradigm for how technical content will be developed and delivered to the public in the future.

Patrons



IEEE Future Directions



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Venue

IEEE TTM 2016 will be held at the **Hilton San Diego Resort & Spa in San Diego, CA, USA**. Situated on the beautiful sands of Mission Bay, the Hilton San Diego is centrally located to all of the area's top attractions.



Hilton San Diego Resort & Spa
1775 East Mission Bay Drive
San Diego, California, 92109 USA
<http://www.sandiegohilton.com/>
Phone: 619-276-4010

A block of rooms have been reserved for attending TTM 2016. The special room rate will be available until September 20th or until the group block is sold out, whichever comes first. For the special discounted rate, please [make your reservations here](#).

You may also call 1-877-313-6645 and mention the code, IEE106.

TTM Organizing Committee



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William Tonti

Yu Yuan

We've conceived and designed TTM 2016 to take attendees out of their own world and give them a glimpse over their own horizons into other domains and ways of seeing the world. Personally, and as chair of this event, my goal is to send attendees home imagining the impossible, and for them to reap the rewards of bold new thinking about their technology pursuits and the social implications and impacts their work may create. [Q&A](#) with Doug Zuckerman, General Chair of TTM 2016.

Registration

Secure your seat at TTM 2016 to participate in *Making the Future*. [Registration](#) includes all sessions, lunches, and the dinner reception. Single day [registration](#) includes all sessions and lunch for the day attended, with an option to purchase the dinner reception.

Discounted rates are available if registration is received by 1 September 2016.

	Registration Fee	Discounted Rate
IEEE Member	\$750	\$500
Non-Member	\$1000	\$750
IEEE Life Member	\$375	\$275
IEEE Student Member	\$375	\$275
Single Day	\$500	\$375
Dinner Reception	\$50	

Secure your seat at TTM 2016.
[Register today at http://sites.ieee.org/ttm/register/](http://sites.ieee.org/ttm/register/)

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Please contact us at ttminfo@ieee.org if you have any questions.

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