



IEEE Southeastern Michigan Section 2017 Fall Conference

Ethics in Engineering, Science and Technology



Conference Program

(Draft v7)

November 9, 2017

Burton Manor
27777 Schoolcraft Road
Livonia, Michigan 48150, USA

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1. Welcome

Welcome to the IEEE Southeastern Michigan Section 2017 Fall Conference. This event is produced by the Southeastern Michigan Section to provide you with a number of personal and IEEE-related opportunities.

- Once again, a very highly regarded and entertaining keynote speaker.
- Invited speakers that will present overviews of their work with respect to the conference theme, *Ethics in Engineering, Science and Technology*. We are sure there is something for everyone in the range of topics this diverse mix of talented speakers will cover.
- Networking time to catch up with friends and make new acquaintances. Everyone at the Conference is an 'expert' in something, and one of the most fascinating aspects of a Section wide conference is finding those interesting individuals you will meet 'for the first time'. So be sure to make that extra effort to introduce yourself to someone you have not met before.
- Socialize over the Conference Dinner with both old and new friends.
- Recognition of some of our volunteers who have contributed so much to our Section's success in the past year.

This year, we have chosen *Ethics in Engineering, Science and Technology (ETHICS 2017)* as the theme for our Fall Conference, in recognition of the difficulty in a modern world of fulfilling multiple and sometimes conflicting moral obligations to different parties. By the 19th century, the emergence of engineering as a distinct profession was accompanied by a need to clarify the relationship between the self-interest that practitioners of engineering have in advancing their careers and business interests, and their moral obligations to society, to their employers and/or clients, and to their profession. As global, social, environmental and business pressures have evolved over the past 150 years, ethical dilemmas have intensified. It has become necessary for all of us to reflect carefully as we traverse an evolving and increasingly challenging ethical landscape.

ETHICS 2017 provides an exciting opportunity for researchers, regulators, educators and practitioners alike to debate, discuss and deliberate issues concerning modern engineering ethics and ethical standards, and their impact on our lives, careers, profession and society. Our Keynote and invited speakers, panel forum, and a reception will enable exchange of experience and perspectives on many levels.

Please enjoy the Conference and the presentations, and take advantage of the wealth of intellectual and network resources available here today. Thank you for your attendance and for supporting the IEEE Southeastern Michigan Section.

Robert Neff
SEM Section Chair

2. Program

TIME	SESSION
1630-1700	Registration / Networking
1700-1705	Welcome & Opening Remarks: PHILIP HALL (Conference Chair)
1705-1735	Speaker #1: YUE-YUN WANG (General Motors) <i>48V Mild Hybrid Vehicle Systems: Modeling, Control and Energy Management Strategy</i>
1735-1800	Speaker #2: ALI MUZZAFFAR (Deloitte) <i>Youth, Ethics and Technology in the Changing World</i>
1800-1830	Speaker #3: EMILY McREYNOLDS (University of Washington) <i>Intelligent personal digital assistants – new challenges in security, privacy and tech policy</i>
1830-1900	Speaker #4: CHERYL L. BROWN (University of North Carolina at Charlotte) <i>RFID Implant Technology and Artificial Intelligence: Can We Spell Ethics and Trust?</i>
1900-1930	Panel & Open Forum Q&A: ETHICS IN INDUSTRY & INNOVATION Moderator: JOHN C. HAVENS (IEEE Global AI Ethics Initiative) Panellists: CHERYL L. BROWN (University of North Carolina at Charlotte, NC) EMILY McREYNOLDS (University of Washington, Seattle WA) BILL MOYLAN (Eastern Michigan University, Ypsilanti MI) ALI MUZZAFFAR (Deloitte, Orange County CA) MANSOOR NASIR (Lawrence Technological University, Southfield MI) YUE-YUN WANG (General Motors, Warren MI)
1930-2030	Conference Dinner
2030-2115	Dinner Keynote: JOHN C. HAVENS (IEEE Global AI Ethics Initiative) <i>Prioritizing ethical considerations at the front-end of design</i>
2115-2130	Closing Remarks: ROBERT NEFF (Chair, IEEE SEM Section)

3. Venue

The conference will be held at Burton Manor, 27777 Schoolcraft Road, Livonia MI 48150. For venue details, location, and directions please see <http://www.burtonmanor.net/>. Parking is free of charge.

4. Keynote Address – John C. Havens

“Prioritizing ethical considerations at the front-end of design”



John C. Havens

Executive Director of The IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems

John C. Havens is the Executive Director of the IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems (see https://standards.ieee.org/develop/indconn/ec/autonomous_systems.html). He is also a regular contributor on issues of technology and wellbeing to Mashable, The Guardian, HuffPo and TechCrunch and is author of *Heartificial Intelligence: Embracing Our Humanity To Maximize Machines* and *Hacking Happiness: Why Your Personal Data Counts and How Tracking it Can Change the World*.

John was an EVP of a Top Ten PR Firm, a VP of a tech start-up, and an independent consultant where he has worked with clients such as Gillette, P&G, HP, Wal-Mart, Ford, Allstate, Monster, Gallo Wines, and Merck. He is also the Founder of The Happathon Project, a non-profit utilizing emerging technology and positive psychology to increase human wellbeing.

John has spoken at TEDx, at SXSW Interactive (six times), and as a global keynote speaker for clients like Cisco, Gillette, IEEE, and NXP Semiconductors. John was also a professional actor on Broadway, TV and Film for fifteen years.

Abstract:

To fully benefit from the potential of Artificial Intelligence and Autonomous Systems (AI/AS), we need to go beyond perception and beyond the search for more computational power or solving capabilities. We need to make sure that these

technologies are aligned to humans in terms of our moral values and ethical principles. AI/AS have to behave in a way that is beneficial to people beyond reaching functional goals and addressing technical problems. This will allow for an elevated level of trust between humans and our technology that is needed for a fruitful pervasive use of AI/AS in our daily lives.

Eudaimonia, as elucidated by Aristotle, is a practice that defines human wellbeing as the highest virtue for a society. Translated roughly as “flourishing,” the benefits of *eudaimonia* begin by conscious contemplation, where ethical considerations help us define how we wish to live. By aligning the creation of AI/AS with the values of its users and society we can prioritize the increase of human wellbeing as our metric for progress in the algorithmic age.

Sponsor:

John C. Havens' participation in the SEM 2017 Fall Conference is sponsored by the IEEE Standards Association.

5. Invited Speakers

5.1 Cheryl L. Brown (University of North Carolina at Charlotte)

“RFID Implant Technology and Artificial Intelligence: Can We Spell Ethics and Trust?”



Cheryl L. Brown, PhD
Associate Professor
Associate Chair and Undergraduate Coordinator
Political Science and Public Administration
American Council on Education Fellow (2007 – 2008)
University of North Carolina at Charlotte, NC

Cheryl is an associate professor in the Department of Political Science and Public Administration and a faculty affiliate of the Data Science Initiative at the University of North Carolina at Charlotte. Her current research focuses on privacy, ethics, and trust in big data for precision medicine and health quantification for connected and autonomous vehicles, both projects she has presented at National Institutes of Health conferences.

Cheryl teaches courses on privacy, ethics, and governance of big data; cybersecurity policy and the Internet of Things; and Chinese domestic and foreign policy. Her writings in the social sciences and engineering include topics on health biometrics and privacy in China and the United States; China's second-generation identification card and RFID technology; cultural dimensions of e-government and smart cards; and ethics in engineering, data science, robotics, and biomimetics. In 2013, Cheryl contributed to the health sector of the 5th Cybersecurity Framework Workshop of the National Institute of Standards and Technology. An active member of IEEE, she participates in IEEE standards working groups on ethics, privacy, and security.

Cheryl received her B.A. degree in Political Science from the University of Florida and Ph.D. and M.A. degrees in Political Science, specializing in Chinese studies, from the University of Michigan.

Abstract:

This presentation addresses the fast-developing and merging facets of multiple biotechnologies such as RFID and artificial intelligence in an increasingly hyper-connected society. It highlights the significance of ethics and trust and the impact on societal technology acceptance. Popular culture and media framing affect the perception and acceptance of biotechnologies, but developments (or lack of) in academia, government, industry, and non-profit settings also have played a major role. The presentation will emphasize the overlapping layers of trust, the convergence of technology and culture, and the multi-disciplinary incorporation of ethics and trust, all key factors to garner support, development, and implementation of ethics in these emerging biotechnologies.

Sponsor:

Cheryl L. Brown's participation in the SEM 2017 Fall Conference is sponsored by the University of North Carolina at Charlotte.

5.2 Emily McReynolds (University of Washington)

“Intelligent personal digital assistants – new challenges in security, privacy and tech policy”



Emily McReynolds

**Program Director & Researcher, Tech Policy Lab
University of Washington
Seattle, WA**

Emily is the Program Director and active researcher at the University of Washington Tech Policy Lab. An interdisciplinary research collaboration between the University of Washington's School of Law, Information School, and School of Computer Science & Engineering, the Lab focuses on emerging technology with the goal to strengthen and inform tech policy.

Emily's research centers on privacy, anonymity, and security with an emphasis on policy surrounding emerging technologies. An expert in security, privacy and tech policy, her work includes analyses of the privacy and security impact of Internet of Things devices, privacy in the technical process of big data, and the law and policy implications of virtual currencies. She has done some amazing work with internet-connected toys ([Toys that Listen](#)), and BitCoin ([Cryptographic Currencies from a Tech-Policy Perspective: Policy Issues and Technical Directions](#)).

Emily is the current co-Chair of the Washington State Access to Justice Board Tech Committee where she has directed projects on access to electronic records and worked to convene technologists and lawyers in a Tech Symposium. Prior to the Tech Policy Lab and her J.D., she spent a number of years working with foundations on their grant making processes and with NGOs focused on corporate social responsibility.

Abstract:

As people and companies bring more devices that are "always on" into homes and workplaces, thus far there has been limited research into these systems' capabilities and their ethical implications for individual privacy. With this study we survey existing, commercially available intelligent personal digital assistants (IPDA): Apple's Siri, Microsoft's Cortana, Amazon's Alexa in the Echo, and Google's Ok Google in the Google Home. We first review how each collects, transmits, and stores user speech, as well as the corresponding security and privacy measures in place. We address how each device makes collected user speech accessible to the user and the degree of anonymity associated with stored user data. Second, we explore the gap between users' expectations of privacy and the reality of how IPDAs collect and store user speech. To greater inform privacy and security considerations, we include an examination of relevant legal frameworks. Finally, we propose new design recommendations for improving privacy.

Sponsor:

Emily McReynolds' participation in the SEM 2017 Fall Conference is sponsored by the University of Washington.

5.3 Ali Muzaffar (Deloitte)

“Youth, Ethics and Technology in the Changing World”



Ali Muzaffar
Senior Consultant
Deloitte & Touche LLP
Orange County, CA

Ali is a Senior Consultant with the Deloitte Cyber Risk Strategy practice in Orange County, CA. His multi-cultural research and professional experience includes working in Malaysia, India and now in the United States on topics ranging from Smart Homes, Spintronics, Smart Grid and now Cyber Security within Medical Devices and Smart technologies.

Ali has a strong interest for social development using technology. He currently serves as Chairman of the Sir Syed Global Scholar Award (www.ssgsa.us), a 10 year old non-profit organization providing Higher Education Scholarships to students in India. He is also a co-founder of Human's Pride – a non-profit organization registered by the students of Aligarh Muslim University to help the poverty stricken in India – which was a regional finalist of the Hult Business Plan Competition in San Francisco. Ali also serves as Vice-Chair of the recently established Student and Young Professionals Committee in the IEEE Society on Social Implications of Technology (SSIT), and was a youth delegate at the United Nations 2017 Summer and Winter Youth Assemblies held in New York.

Originally from India, he received his Bachelor degree in Electronics Engineering from Aligarh University, and Master degree in Engineering Management from University of California, Irvine.

Abstract:

In every age of human civilization, youth are the torch bearers and the hope for the advancement of humanity. History supports my claim that with every new generation, we set harder challenges while breaking old records on our voyage to the future age of Artificial Intelligence, Flying Cars, Space Settlements, Virtual Reality, and then explore more advanced areas to progress. However, as a young professional, my concern often exceeds my excitement as I ponder whether in this changing and fast moving world we are neglecting to pause and check the advancement of Youth in the Ethics side of the journey. My talk as such will shed light on the importance of Ethics and why there is concern. I will share selected experiences from my colleagues in Deloitte, past

classmates from India, Malaysia and the USA, and offer personal recommendations on how to tackle the challenges of Youth, Ethics and Technology in the Changing World.

Sponsor:

Ali Muzzaffar's participation in the SEM 2017 Fall Conference is sponsored by SEM Chapter 3: Aerospace & Electronics Systems Society and Communications Society, and SEM Chapter 12: Control Systems Society.

5.4 Yue-Yun Wang (General Motors)

“48V Mild Hybrid Vehicle Systems: Modeling, Control and Energy Management Strategy”



Yue-Yun Wang, PhD
GM Technical Fellow
Powertrain Systems Research Lab
General Motors Global Research and Development
Warren, MI

Dr. Yue-Yun Wang joined General Motors Company in 2005, where he is currently a GM Technical Fellow in the Propulsion Systems Research Lab. From 1995 to 2005, he was a Technical Advisor with Cummins Engine Company. In over 20 years industry service, he has led broad research and innovations developing advanced powertrain control technologies, that have enabled introducing new generations of engine management systems for passenger cars, light, medium and heavy duty trucks, with industry-leading low emissions and fuel consumption. He has authored and co-authored over 120 publications, and holds over 85 U.S. patents for automotive applications.

Yue-Yun has also served as the Associate Editor of IEEE Transactions on Vehicular Technology, and the Associate Editor of IEEE Transactions on Control Systems Technology. He is the Vice Chair of Automotive Controls Technical Committee of IEEE Control Systems Society.

Yue-Yun received his Ph.D in electrical engineering from Shanghai Jiao Tong University in 1987. After graduation, he spent years in research and teaching at several academic institutions. He was an assistant professor at SJTU, then an Alexander von Humboldt research fellow at Duisburg University Germany, and a visiting scholar at Syracuse University and Ohio State University.

Abstract:

In a recent move, countries like Britain, France and China consider banning the sale of pure gasoline and diesel powered vehicles from their markets around 2040. Hybrid

vehicles and pure electrical vehicles are increasing their market shares in a global scale. Electrification has now become a main stream in automotive industry to reduce CO2 emissions. In alignment with the latest development in electrification, this presentation introduces 48 volts mild hybrid vehicle systems, including the background information of mild hybrid electrification, the cost versus fuel economy benefits, and the future market penetration. The different architectures of 48V mild hybrid vehicles are reviewed based on positioning an electrical motor in a particular powertrain, as well as the components of the 48V mild hybrid system, including battery, motor/generator unit, electrical boosting device, and electrified catalyst. Then the presentation is followed by more detailed discussion to modeling, control and energy management of the 48V mild hybrid vehicles.

Sponsor:

Yue-Yun Wang's participation in the SEM 2017 Fall Conference is sponsored by SEM Chapter 2: Vehicular Technology Society, and SEM Chapter 12: Control Systems Society.

6. Standby Speakers

The SEM Section is excited that it's 2017 Fall Conference *ETHICS 2017* has attracted such talented invited speakers, four of which are coming from out of state – two from the West Coast. However, the Conference Organizing Committee recognizes that, despite meticulous planning and good intentions, external factors may arise at the last minute that could result in a speaker not being able to attend. The SEM Section is therefore grateful to local distinguished academics Bill Moylan (EMU) and Mansoor Nasir (LTU) for agreeing to be standby speakers should such a situation arise.

6.1 Bill Moylan (Eastern Michigan University)

“Ethics in Engineering Project Management – Research on Values-Based Leadership in Project Driven Arenas”



William Moylan, PhD, PMP, FESD, DTM
Associate Professor
School of Visual and Built Environments
Eastern Michigan University
Ypsilanti, MI

Bill is an Associate Professor on the full-time faculty of Eastern Michigan University's College of Technology and instructs in Construction Management. In addition, he

consults, trains, educates, provides expert witness testimony, and practices Professional Project Management and Construction Engineering. He consults to major industrial and public sector clients on developing and implementing Project Management within their organizations; presents short courses and professional training seminars in basic and applied project management, PM software applications, and public speaking; and provides expert testimony on construction management and construction / industrial safety.

Bill has extensive professional experience in all aspects of program and project management, including over eleven years internationally with the Arabian American Oil Company. Overall, he has worked on construction and facility design projects within the sectors of commercial, industrial, heavy construction, infrastructure, and residential development for facility clients in oil and gas production, petroleum and refining, chemical processing, energy, academic, federal government, municipal, public service, non-government organization, automotive, and manufacturing industries.

Bill received his Ph.D. in Organization & Management with focus in Leadership from the Capella University School of Business. His dissertation research was on values-based leadership concepts, values and skills, and its application to building ethical partnerships in the construction industry. He received his BS in Construction Engineering from Lawrence Technological University; and, his Masters from the Massachusetts Institute of Technology. He is active in a variety of professional societies and civic activities, including the Project Management Institute, the Engineering Society of Detroit, Habitat for Humanity, and Toastmasters International.

Abstract:

The presentation addresses the skills, values and concepts of ethical engineering professionals. It is based on research that considers the applicability of the Values-Based Leadership [VBL] construct to the processes of managing major engineering projects in different industries and applications, with a focus on improving cross-functional partnerships and leading project teams.

The research study assesses the eleven leadership values postulated in the criteria for the Malcolm Baldrige National Quality Award as a means to establish an ethical rubric within project-driven industries. The research study uses a quantitative approach (survey) to assess the critical elements of this topic.

Additionally, the presentation reviews the six core principles of values-based leadership postulated by G.W. Fairholm, identifies the values shared between the leader and followers, reviews the values-base for the particular application, and compares the leader's ethical values with the organization.

Sponsor:

Bill Moylan's participation in the SEM 2017 Fall Conference is sponsored by the Eastern Michigan University and the Engineering Society of Detroit.

6.2 Mansoor Nasir (Lawrence Technological University)

“Wearable Technology and the challenges it poses for Ethics and Privacy”



Mansoor Nasir, PhD
Assistant Professor
Department of Biomedical Engineering
Lawrence Technological University
Southfield, MI

Mansoor is an assistant professor in the Department of Biomedical Engineering at Lawrence Technological University in Southfield, Michigan. His primary area of research is in the area of chemical and biological sensors and MEMS technology. He is also passionate about engineering pedagogy focusing on effective classroom learning techniques that improve student-teacher interaction and knowledge retention. He has conducted several faculty workshops focusing on entrepreneurial minded learning and fostering innovation in students.

In addition, to teaching the biomedical best practices course, Mansoor also leads the capstone design experience for biomedical engineering students. Recently, he has been involved in a new cross-disciplinary course on Wearable Technology, focusing both on the design considerations and social awareness issues surrounding such consumer devices.

Mansoor received his B.Sc. degree in Electrical and Computer Engineering from the University of Cincinnati and Ph.D. in Bioengineering from University of California, Berkeley. Mansoor is a member of IEEE and the Biomedical Engineering Society (BMES).

Abstract:

The Wearable Technology, or simply “Wearables”, is an area that has seen exponential growth in the last decade or so. The initial gadgets were not very sophisticated and designed carefully around consumer appeal. With the increasing capabilities and features of such devices, however, the ability to measure physiological and health parameters has become possible. Privacy and security are the cornerstones of medical data, but wearables are blurring the lines between consumer and medical devices. Questions of ownership and accessibility of personal health data continue to pose challenges for manufacturers and policy makers. An overlooked factor is the changing attitude of consumers about privacy in the digital age. All this makes for a dynamic

ecosystem where engineers and designers must innovate while navigating through intertwined technological and societal factors.

Sponsor:

Mansoor Nasir's participation in the SEM 2017 Fall Conference is sponsored by the Lawrence Technological University and SEM Chapter 11: Engineering in Medicine and Biology.

7. Panel & Open Forum Q&A

“Ethics in Industry and Innovation”

This session will explore the central theme of the Conference by discussing ethical challenges and issues faced by engineering, science and technology professionals in an industry environment driven by competitive innovation.

As global, social, environmental and business pressures have evolved over the past 150 years, ethical dilemmas have intensified. It has become necessary for all of us to reflect carefully as we traverse an evolving and increasingly challenging ethical landscape. Of central importance is the need to clarify the relationship between the self-interest that practitioners of engineering have in advancing their careers and business interests, and their moral obligations to society, to their employers and/or clients, and to their profession.

This session will also provide the opportunity for Conference attendees to put questions to the panel members, in regard to the speaker presentations and also in relation to comments offered during the panel discussions.

Moderator: John C. Havens (IEEE Global AI Ethics Initiative)

Panelists:

Cheryl L. Brown (University of North Carolina at Charlotte, NC)

Emily McReynolds (University of Washington, Seattle WA)

Bill Moylan (Eastern Michigan University, Ypsilanti MI)

Ali Muzzaffar (Deloitte, Orange County CA)

Mansoor Nasir (Lawrence Technological University, Southfield MI)

Yue-Yun Wang (General Motors, Warren MI)

8. Sponsorship

How to finance our events is an issue our Southeastern Michigan Section faces each Spring and Fall. If your university, organization or corporation would be interested in being a financial sponsor, please contact our Sponsorship and Exhibits Chair, Philip Hall at Philip.Hall@ieee.org

We thank our patrons and sponsors for their generous support of our SEM 2017 Fall Conference: *ETHICS 2017*.

We especially recognize the continuing support provided to SEM Section by:



ZF Electronic Systems
15811 Centennial Drive
Northville, MI 48168

9. Event Supporters

**SEM Chapter 2:
Vehicular Technology Society**



**SEM Joint Chapter 3:
Aerospace & Electronics Systems
Society, and
Communications Society**



**SEM Chapter 11:
Engineering in Medicine and
Biology Society**



**SEM Chapter 12:
Control Systems Society**

SEM Chapter 13:
Education Society



We are hoping other SEM Chapters and Affinity Groups might also 'sponsor' one or more speakers and/or panel participants.



IEEE Standards Association



In addition to UNC Charlotte and University of Washington sponsoring speakers, we assume all our Student Chapters will also get on-board.





10. Conference Committee

Conference Co-Chairs	Philip Hall & Nevrus Kaja
SEM Section Chair	Robert Neff
Secretary	Kimball Williams
Finance Chair	Nevrus Kaja
Registration Chair	David Mindham
Local Arrangements Chair	Ravi Nigam
Sponsorship and Exhibits Chair	Philip Hall
Publications Chair	Ravi Nigam
Publicity Chair	Rajeev Verma
Student Engagement Chair	Hashim Abdul
Young Professionals Chair	Ian Hutt
Webmaster	Scott Lytle
Official Photographer	Akio Fujimaki
IEEE-USA Conference Liaison	Charles Rubenstein, ETHICS Symposium International Steering Committee Chair

11. 2017 SEM Section Officers

Robert Neff	Section Chair
Nevrus Kaja	Section Vice Chair
David Mindham	Section Secretary
Xinhua Xiao	Section Treasurer
Kimball Williams	Past Chair
Don Bramlett	Section Adviser
Kimball Williams	Chair Technical Activities
Aaron Romain	Chair Educational Activities
Hashim Abdul	Chair Student Activities
Aisha Yousuf	Awards Committee Chair
Ravi Nigam, P.E.	Chair Communications and Marketing
Scott Lytle	Section Webmaster
Nevrus Kaja	E-Wavelengths Editor in Chief
Kimball Williams, P.E.	Chair Section Nominations Committee
Aisha Yousuf	Chair Section Membership Committee
Sharan Kalwani	Chair PACE
Ian Hutt	Young Professionals
Tia Twigg	Women in Engineering Affinity Group
Harpreet Singh, Ph.D.	Chair Life Member Affinity Group
Charles Albrecht	Chair Consultants Network Affinity Group
Robert Adams	Chapter I Chair (Circuits, Inf. Theory, Signal Processing)
Lawrence Baczkowski	Chapter II Chair (Vehicular Technology)
Philip Hall	Chapter III Chair (Communications, Aerospace)
Kimball Williams	Chapter IV Chair (Trident, Antennas, Microwave, Electron Devices, Photonics)
Subramanian Ganesan, Ph.D.	Chapter V Chair (Computers)
Leland Pierce	Chapter VI Chair (Geosciences & Remote Sensing)
David Mindham	Chapter VII Chair (Power Engineering, Ind. Applications)
Scott Lytle	Chapter VIII Chair (Electromagnetic Compatibility)
Sridhar Nalla	Chapter IX V. Chair (Ind. Electronics, Power Electronics)
Raymond Sasinowski	Chapter X Chair (Technology Management Council)
Maurice Snyder	Chapter XI Chair (Engineering in Medicine & Biology)
Rajeev Verma	Chapter XII Chair (Control Systems)
Sharan Kalwani	Chapter XIII Chair (Education)
Javier Alcazar	Chapter XIV Chair (Robotics & Automation)
David Trescott	Chapter XV Chair (Nuclear Plasma Sciences)
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Randy Boone	Chapter XVII Chair (Nanotechnology Council)
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Vinita Patil	Lawrence Technological University SEM Student Branch
Jordie Liao	Michigan State University SEM Student Branch
Abhijit Maktal	Oakland University SEM Student Branch
Chaomin Luo	University Of Detroit-Mercy SEM Student Branch
Laura Balzano	University Of Michigan-Ann Arbor SEM Student Branch
Nevrus Kaja	University Of Michigan-Dearborn SEM Student Branch
Christopher Lopez	Wayne State University SEM Student Branch



Visit us online at <http://www.ieee-sem.org>

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