

# 2022 | LAS VEGAS

# CONFERENCE PROGRAM

MONDAY, MARCH 7<sup>th</sup> — THURSDAY, MARCH 10<sup>th</sup>, 2022 The Venetian | Las Vegas, NV

### Samuel Graham, Jr.

Dean, A. James Clark School of Engineering University of Maryland

"When the world looks for solutions to global challenges, it goes to Maryland. The breakthroughs in new battery technologies from the Maryland Energy Innovation Institute, development of new building energy systems technologies, and innovations in biotechnology and bioengineering, quantum computing, transportation, rotorcraft and hypersonics, and sustainability are just a few of the areas where the world benefits from what we do."

When an innovator wanted to engineer a more advanced and equitable society, he chose a research and education powerhouse with ()) global impact,

# and came to Maryland.



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# **WELCOME**



JAYATHI MURTHY Ronald and Valerie Sugar Dean Henry Samueli School of Engineering and Applied Science University of California, Los Angeles



RAMA VENKAT Dean Howard R. Hughes College of Engineering University of Nevada, Las Vegas

# LETTER FROM DEAN JAYATHI MURTHY AND DEAN RAMA VENKAT

Welcome to the 2022 Engineering Deans Institute (EDI) and scintillating Las Vegas!

We live today in an era of rapid change. Long before COVID-19, the world of higher education was already in flux. With the fall in global poverty, the educational aspirations of millions of talented and ambitious young people all over the world have increasingly centered on engineering and technology. And yet, many US universities must confront a continuing disinvestment in higher education. Global challenges like climate change are demanding engineering solutions. New technologies like artificial intelligence and machine learning, global interconnectivity, automation, and transformational medical advances such as CRISPR, are disrupting entire industries. Our pandemic experience has opened up new ways of thinking about the delivery of education and the nature of work. And we have come to understand as never before that the benefits of engineering education are not uniformly available to all members of our society.

The theme of the 2022 Engineering Deans Institute is "Re-Imagining Engineering: Building a Diverse, Sustainable and Healthy Future." In this meeting, we seek to address these important issues through a variety of exciting keynote, panels, workshops and discussions. As always, equity, diversity and inclusion remain an abiding concern, and we address this important topic as well. EDI 2022 will be held in hybrid mode to reach as wide an audience as possible.

We have arranged three fantastic tours on Thursday, March 10, 2022. These include a hike of Red Rock Canyon, led by geologist and Dean of UNLV's Honors College, Dr. Andrew Hansen; a behind-the-scenes tour of the Bellagio Fountains show; and a visit to CityCenter's Aria Resort and Casino to see the great work they have done in environmental sustainability.

Most important of all, we hope that EDI 2022 will give us all a chance to re-connect with each other in person after the long pandemic-related hiatus and to learn from our varied experiences and backgrounds. We fervently hope that what happens in Las Vegas does not stay in Las Vegas – that you will take the insights you have gained at EDI 2022 back to your home institutions and help make engineering education and research the crown jewel of higher education the world over.

# EDI 2022

# **ENGINEERING DEANS COUNCIL**

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Sharon L. Walker Drexel University

**Jelena Kovacevic** NYU's Tandon School of Engineering

**Mike Toole** University of Toledo **Gilda Barabino** *Past EDC Chair* Olin College of Engineering

Norman Fortenberry ASEE Executive Director

Adrienne Minerick ASEE President Michigan Technological University

# **EX-OFFICIO MEMBERS**

Norman Fortenberry ASEE Executive Director n.fortenberry@asee.org Gilda Barabino Past Chair 2019-2020 President of Olin College presidentbarabino@olin.edu Adrienne Minerick ASEE President 2021-2022 Dean of Engineering Michigan Technological University minerick@mtu.edu

### **2022 EDI PLANNING COMMITTEE**

**Jayathi Murthy** *EDI Chair University of California, Los Angeles* 

Alexis R. Abramson Dartmouth College

**Emily Allen** California State University, Los Angeles

**Rashid Bashir** University of Illinois at Urbana

Christos Christodoulou, University of New Mexico

**Richard L. Corsi** *University of California, Davis* 

**Amy Fleischer** California Polytechnic, San Luis Obispo

Emily Hunt West Texas A&M University

**Vijay Kumar** University of Pennsylvania Javier Kypuros University of Texas, Tyler

Manos Maragakis University of Nevada, Reno

**Cammy Abernathy** University of Florida

**JoAnn Lighty** *Boise State University* 

**Keith Bowman** University of Maryland, Baltimore County

Michele Marcolongo, Villanova University

**Dora Smith** Siemens

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**Steve Starrett** *LeTourneau University* 

**Levi Thompson** University of Delaware

**Rama Venkat** University of Nevada, Las Vegas

Sharon Walker Drexel University

**Yannis Yortsos** University of Southern California

# **2022 EDI SCHEDULE**

# MONDAY, MARCH 7, 2022

- 10:00 A.M. 6:00 P.M. Registration Galileo Foyer
- 11:30 A.M. 1:30 P.M. Engineering Deans Council (EDC) Executive Committee Meeting Room 701

### **Organizer:**

- Dr. Cammy Abernathy, University of Florida
- 12:30 P.M. 2:30 P.M. Discussing Current Topics for Deans at Primarily Undergraduate-Focused Institutions Room 1003-1007 & 903-907

Deans have been surveyed to determine key topics currently faced at primarily undergraduate-focused institutions. This session will be interactive, with smallgroup discussions and knowledge sharing focused on relevant topics.

### **Organizers:**

- Dr. Katy Snyder, University of Detroit-Mercy
- Dr. Amy Fleischer, Cal Poly-San Luis Obispo
- Dr. Steven Starrett, LeTourneau University
- Dr. Emily Hunt, West Texas A&M University
- 1:30 P.M. 2:30 P.M. Public Policy Committee Meeting Room 801

### **Organizer:**

- Dr. JoAnn Lighty, Boise State University
- 2:30 P.M. 3:30 P.M. Data Committee Meeting Room 801

### **Organizer:**

- Dr. Keith Bowman, University of Maryland, Baltimore County
- 3:00 P.M. 5:00 P.M. New Deans Forum Room 1003-1007 & 903-907

### **Organizers:**

- Dr. Kyle Squires, Arizona State University
- Dr. Levi Thompson, University of Delaware
- 6:30 P.M. 8:30 P.M. Welcome Reception: University of Nevada, Las Vegas Campus

### **Organizer:**

• Dr. Rama Venkat, University of Nevada, Las Vegas

### **TUESDAY, MARCH 8, 2022**

### 7:00 A.M. – 6:00 P.M. Registration Galileo Foyer

7:30 A.M. – 9:00 A.M. Breakfast, Welcome, and Keynote Address Room 1003-1007 & 903-907 Sponsored by The University of Maryland, College Park

#### Keynote Session: The Emerging Role of Engineers in Fixing Climate Policy

Mary Nichols will discuss why engineers need to be active participants in designing climate solutions and how they can do so. What role can engineers play in the climate policy landscape? How can engineers implement climate solutions amid a contentious political environment? Her talk will delve into why it is essential to train engineering students and mid-career professionals to understand how policy is made and why it matters.

#### **Moderators:**

- Dr. Jayathi Murthy, University of California, Los Angeles (UCLA)
- Dr. Sharon Walker, Drexel University

#### **Speaker:**

• Mary Nichols, Former Chair, California Air Resources Board; Professorin-Residence, UCLA School of Law and the Institute of Environment and Sustainability

### 10:00 A.M. — 10:30 A.M. Networking Break with Refreshments Room 1001-1002 & 901-902 Sponsored by Florida A&M University-Florida State University College of Engineering

### 10:30 A.M. – 11:45 A.M. Session 1: The Future of Engineering Research 1003-1007 & 903-907

Dr. Edl Schamiloglu will present on the NSF Engineering Research Visioning Alliance (ERVA), followed by interactive roundtable discussions at which deans will synthesize input and provide feedback.

### **Moderators:**

- Dr. Vijay Kumar, University of Pennsylvania
- Dr. Christos Christodoulou, University of New Mexico
- Dr. Michele Marcolongo, Villanova University

#### **Speakers:**

- Dr. Christos Christodoulou, University of New Mexico
- **Dr. Edl Schamiloglu,** ERVA Co-Principal Investigator, Distinguished Professor of Electrical and Computer Engineering and Associate Dean for Research and Innovation, University of New Mexico
- Dr. Jennifer Carinci, Executive Director, ERVA



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Not associated with a sponsored refreshment break.

# **2022 EDI SCHEDULE**

# TUESDAY, MARCH 8, 2022

### 11:45 A.M. – 12:00 P.M. Cool Ideas Introduction and Presentations I Room 1003-1007 & 903-907

Deans will share four-minute elevator pitches describing interesting or innovative programs they have developed in their colleges. Sessions will focus on such topics as equity and diversity initiatives, curricular innovations, and new ideas in hiring or faculty development. Each presenter will provide lessons learned in the development and implementation of the program.

### **Organizer:**

• Dr. Michelle Sabick, University of Denver

12:00 P.M. – 1:30 P.M. Lunch and Keynote Session Room 1003-1007 & 903-907 Sponsored by Dassault Systèmes

### Speaker:

• Xavier Fouger, Global Academia Programs Senior Director

### 1:30 P.M. – 2:45 P.M. Session 2: Dispelling Myths Around Racial Diversity in Engineering Room 1003-1007 & 903-907

The goal of this session is to raise awareness and catalyze action of those empowered to make and implement change. This panel discussion will focus on: 1. highlighting the experiences of underrepresented faculty, 2. dispelling myths/ misconceptions around race in engineering (faculty and students), and 3. sharing and advancing real solutions that deans can employ at their institutions. This session will also provide an opportunity for participants to discuss and plan their course of action upon return to their home campuses based on their learning.

### **Organizers:**

- Dr. Sharon Walker, Drexel University
- Dr. Michelle Sabick, University of Denver
- Dr. Javier Kypuros, University of Texas, Tyler

### **Moderator:**

• Dr. Javier Kypuros, University of Texas, Tyler

### **Speakers:**

- Dr. Adia Harvey Wingfield, Washington University in St. Louis
- Dr. Mark Matsumoto, University of California, Merced
- Dr. Ayanna Howard, Ohio State University

### 2:45 P.M. – 3:00 P.M. Cool Ideas Presentations II Room 1003-1007 & 903-907

### **Organizer:**

• Dr. Michelle Sabick, University of Denver



# **GREAT** BREAKTHROUGH ADVANCED STRIDES

Innovation in robotics and artificial intelligence sets a pace that challenges our imaginations to keep up. So, we do things nobody has done before. Cassie, the two-legged robot developed at Oregon State University, made history last summer by completing a 5K, using deep reinforcement learning to master a running gait on outdoor terrain, without optical sensors. In the fall, our College of Engineering launched a multidisciplinary graduate program in artificial intelligence — the first of its kind in the U.S. What's next? Find out at **robotics.oregonstate.edu**.



# **2022 EDI SCHEDULE**

# TUESDAY, MARCH 8, 2022

#### 3:00 P.M. – 3:30 P.M. Refreshment Break Room 1001-1002 & 901-902 Sponsored by Florida A&M University-Florida State University College of Engineering

# 3:30 P.M. – 4:45 P.M. Session 3: COVID-19 as a Disruptor of Engineering Education (Where Do We Go from Here?) Room 1003-1007 & 903-907

COVID-19 has caused short-term disruptions in higher education, including engineering education and research. What are the long-term challenges and opportunities that will stem from our current and possibly future pandemics? How will we respond to a host of issues, from teaching to research, broadening participation and inclusiveness to promotion and tenure, staff organization to facilities optimization? This session brings together three deans as panelists who will address targeted questions on related issues, with audience participation through group brainstorming exercises.

### **Organizer:**

- Dr. Rich Corsi, University of California, Davis
- Dr. Manos Maragakis, University of Nevada, Reno

### **Speakers:**

- Dr. Emily Allen, California State University, Los Angeles
- Dr. Kyle Squires, Arizona State University
- Dr. Vijay Kumar, University of Pennsylvania
- 4:45 P.M. 5:00 P.M. Cool Ideas Presentations III Room 1003-1007 & 903-907

### **Organizer:**

• Dr. Michelle Sabick, University of Denver

### 5:00 P.M. - 6:00 P.M. Session 4: ABET Updates and Listening Session Room 1003-1007 & 903-907

Join Joe Sussman, Chief Accreditation Officer and Chief Information Officer at ABET, to hear about ABET updates and the impact of the pandemic on accreditation. The interactive listening session will offer ample opportunities for questions. The session will highlight how ABET succeeded during 2020–2021 and review the status of the 2021–2022 accreditation cycle. In addition, Dr. Sussman will describe ABET's plans for moving forward into the 2022–2023 accreditation cycle, given existing pandemic uncertainty. We invite you to bring your questions and issues.

### **Organizer:**

• Dr. Jayathi Murthy, University of California, Los Angeles (UCLA)

### Speaker:

• **Dr. Joe Sussman,** ABET Chief Accreditation Officer and Chief Information Officer



# **2022 EDI SCHEDULE**

# TUESDAY, MARCH 8, 2022

7:00 P.M. – 7:30 P.M. Networking Reception Room 1003-1007 & 903-907 Sponsored by Oregon State University & University of Nevada, Reno

### Speaker:

- Dr. Scott Ashford, Dean
- 7:30 P.M. 10:00 P.M. Banquet and Keynote Room 1003-1007 & 903-907 Sponsored by University of Louisville

### Speaker:

• Dr. Emmanuel Collins, Dean of the J. B. Speed School of Engineering

## WEDNESDAY, MARCH 9, 2022

Sponsor display tables are available during refreshment and networking breaks.

- 7:00 A.M. 5:00 P.M Registration Galileo Foyer
- 7:30 A.M. 9:00 A.M Breakfast and Sponsor Speaker Room 1003-1007 & 903-907 Sponsored by EngineeringCAS

Total Enrollment: Redefining Engineering Enrollment

### Speaker:

Ron Hyman, Executive Director, EngineeringCAS, Liaison International

9:00 A.M. – 10:00 A.M. General Session Keynote Speaker How new technologies are ushering in an era of accelerated discovery Room 1003-1007 & 903-907

> IBM Chairman and CEO Dr. Arvind Krishna will discuss how engineering students and professionals can use cutting-edge technologies, such as cloud and quantum computing as well as AI, to accelerate discovery as they continue to drive progress today and address the grand challenges of tomorrow. Grainger College of Engineering Dean Rashid Bashir will engage Dr. Krishna in a fireside chat to discuss these topics.

### **Organizer:**

• Dr. Rashid Bashir, University of Illinois Urbana-Champaign (UIUC)

### **Speaker:**

• Dr. Arvind Krishna, IBM Chairman and CEO

10:00 A.M. – 10:30 A.M. Networking Break with Refreshments Room 1001-1002 & 901-902 Sponsored by Florida A&M University-Florida State University College of Engineering

### WEDNESDAY, MARCH 9, 2022

#### 10:30 A.M. – 11:45 A.M. Session 5: Educating Trustworthy Engineers Room 1003-1007 & 903-907

Exponential changes in technology hold the promise of solving Grand-Challengelike problems, but also contain the seeds of powerful unintended consequences. Today's engineers need to understand the impact of technology and thus combine outstanding technical competence with outstanding character, leading to trustworthiness, sorely needed in today's fast-changing world. This session will review the current state of this important topic and how engineering schools are addressing it in education and research. The key theme is that technology and engineering are inseparable from the examination of their impacts on values, ethics, and society.

#### **Organizers:**

- **Dr. Yannis Yortsos,** University of Southern California (USC) Viterbi School of Engineering
- Dr. Alexis Abramson, Thayer School of Engineering, Dartmouth University

#### **Speakers:**

- Dr. Olga Pierrakos, Department of Engineering, Wake Forest University
- Dr. Richard Miller, Olin College of Engineering
- Dr. Rosalyn Berne, University of Virginia
- Dr. Solomon G. Diamond, Thayer School of Engineering, Dartmouth University

### 11:45 P.M. – 12:00 P.M. Cool Ideas Presentations IV Room 1003-1007 & 903-907

#### **Organizer:**

- Dr. Michelle Sabick, University of Denver
- 12:00 P.M. 1:30 P.M. Engineering Deans Council (EDC) Business Lunch Meeting

### Reimagining Industry-university Relations Room 1003-1007 & 903-907

Sponsored by Florida International University

#### Speaker:

• Gerald J. Deren (Gerry), Academic Enablement and Industry 4.0 Thought Leader, Siemens

Many companies face extinction if they cannot keep up with the rapid pace of technological growth. To succeed, they need to partner with academia to share their workforce needs and identify talent gaps. This session will delve into industry hiring trends and evolving strategies. Siemens' "Adopt-A-University" program will be presented as a case study to demonstrate a holistic approach to industry-academic engagement.



# **2022 EDI SCHEDULE**

# WEDNESDAY, MARCH 9, 2022

### 1:30 P.M. – 2:45 P.M. Session 6: Finding Opportunities During a Crisis Room 1003-1007 & 903-907

Deans of engineering may face numerous crises during their careers. This session will help you identify opportunities during a crisis; build related skills; and renew, transform, and grow as a result of any crisis.

### **Organizers:**

- Dr. Steve Starrett, LeTourneau University
- Dr. Rama Venkat, University of Nevada, Las Vegas (UNLV)

### **Speaker:**

• Dr. Robert Ulmer, Dean of Urban Affairs, University of Nevada, Las Vegas (UNLV)

### 2:45 P.M. – 3:00 P.M. Cool Ideas Presentations V Room 1003-1007 & 903-907

### **Organizer:**

• Dr. Michelle Sabick, University of Denver

### 3:00 P.M. – 3:30 P.M. Refreshment Break

Room 1001-1002 & 901-902

Sponsored by Florida A&M University-Florida State University College of Engineering



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Jayathi Murthy Dean of UCLA Samueli School of Engineering

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# **2022 EDI SCHEDULE**

# WEDNESDAY, MARCH 9, 2022

### 3:30 P.M. – 4:45 P.M. Session 7: Industry 4.0: Preparing Our Future Workforce for the "Next Normal," Room 1003-1007 & 903-907

How do we design the "next normal" to prepare students for the engineering careers of tomorrow? Engineering is at a crossroads. This includes its practice in the workplace and how it's taught in the classroom. A digital transformation has shifted the engineering landscape, and industry and academia must collaborate to improve curricula, work-based experiences, policies, and practices to prepare future engineers and skilled technical workers.

This panel will discuss how academia can tackle the challenge of preparing the workforce for the fourth industrial revolution. This will be an engaging and interactive discussion addressing targeted topics around the transformative technologies that define Industry 4.0. This session is part of a series of ASEE Corporate Member Council events that are fostering new networks, consortia, and partnerships among academic institutions, businesses, and policy makers to spur the evolution of engineering education to keep pace with industry needs. Mark your calendars to join the in-person gathering that is the culmination of this two-year effort: the Industry 4.0 Workforce Summit, April 25-26, 2022, Omni Shoreham Hotel, Washington, DC.

### **Organizers:**

- Cynthia Murphy-Ortega, Chevron
- Dr. Sharon Walker, Drexel University

### **Moderators:**

- Dora Smith, Siemens
- Dr. Sharon Walker, Drexel University

### **Panelists:**

- Rudi Ngnepi, NI (National Instruments)
- PJ Boardman, MathWorks;
- Scott Shireman, Coursera;
- Karen Wosczyna-Birch, National Center for Next Generation Manufacturing, NSF Center of Excellence, Connecticut College of Technology
- 4:45 P.M. 5:00 P.M. Cool Ideas Presentations VI Room 1003-1007 & 903-907

### **Organizer:**

• Dr. Michelle Sabick, University of Denver

#### 5:30 P.M. – 7:30 P.M. Closing Reception Room 1003-1007 & 903-907 Sponsored by University of California, Los Angeles & The Boeing Company

### **Speaker:**

• Steven A. Chisholm, Vice President – Mechanical and Structural Engineering, Boeing.

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# **TOURS THURSDAY, MARCH 10**

### BEHIND THE SCENES TOUR: The Bellagio water fountain

### **Description:**

Join Bellagio's Behind the Scenes tour of its famous Water show. You will get to see the electrical and mechanical and control systems, software and how it is all integrated to present a beautiful water show for the visitors.

### **Other Details:**

- Number in each group: 10
- Deans should meet: Inside the Bellagio Hotel at the North Valet Entrance
- Length of tour: (1hour :30 mins)
  - Tour 1: 10 am -11:30 pm
  - Tour 2: 12 noon to 1:30 pm

### POC:

Dr. Rama Venkat, Dean of Engineering, UNLV.

# **MSM SUSTAINABILITY TOUR**

### **Description:**

Join MGM's sustainability team for a behind-thescenes tour of their world-class, Aria Resort & Casino. Learn about MGM's sustainability journey through sustainable construction and design, responsible operations and see a state-of-theart, combined heat and power plant in action! Please expect to be on your feet and walking for the duration of the tour. Close toed walking shoes are recommended.

### **Other Details:**

- Number in each group: 20
- Deans should park in Aria Self Park, take the escalators to the second floor and meeting at the entrance of the Aria Convention Center.
- Length of tour: (1hour :30 mins)
  - Tour 1: 10 am -11:30 pm
  - Tour 2: 12 noon to 1:30 pm

### **POC:** Brittany Price

# HIKE INTO THE RED ROCK CANYON

### **Description:**

Your trip leader will be Dr. Andrew Hanson, a geologist and the Dean of UNLV's Honors College. We will travel by coach to the Red Springs Picnic area in Calico Basin just outside the Red Rock Canyon Conservation Area west of Las Vegas. Facilities at the site include picnic tables, restrooms, water fountains, and a raised boardwalk loop trail. The trail goes past archeological, historical, and geologic features. Birders will see several species common to the area. Also visible from the area is the worldfamous Keystone Thrust, a major geologic feature that separates Upper Cambrian (485-500 m.y.) carbonates from Lower Jurassic (180-190 m.y.) Aztec Sandstone. Motion on the fault resulted in the much older Cambrian rocks, which were originally farther to the west to be thrust eastward up over the younger Jurassic rocks, a feature that is famous worldwide among geologists. Cliffs of the Aztec Sandstone slightly further to the west of our destination attract rock climbers from around the world.

Participants are encouraged to wear comfortable clothes (long pants, a long sleeve shirt, tennis shoes, a hat/cap, and a light jacket) and to wear sunscreen though you can walk the trail in any footwear. The desert is bright so sunglasses are helpful but not essential. Expect beautiful spring weather, but check the forecast as we get rain at this time of the year on rare occasions.

### **Other Details:**

- Number in each group: 60
- Bus will pick the attendees up at the Venetian Hotel
- Length of tour: (3 hours including travel time)
- Tour:
  - Leave Venetian at 7am Arrive Red Rock by 7:45
  - Leave Red Rock at 9:15am Return to Venetian by 10am

### POC:

Dr. Andrew Hansen, Dean, UNLV Honors College

Dr. Rama Venkat, Dean of Engineering, UNLV.



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# Excellence Through DIVERSITY ASEE 2022 ANNUAL CONFERENCE June 26th - 29th, 2022

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WE ARE LEADING THE WAY in research that matters in cybersecurity, Internet of things, artificial intelligence, autonomous systems, agile manufacturing, and finding disease cures. We think out of the box to develop solutions to grand challenges like water resources, renewable energy, and climate change.

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WE ARE CHANGING LIVES not just through our research, but in transforming the lives of our students, many of whom are first-generation or from under-represented backgrounds. This leads to the diverse perspectives needed to tackle the complex challenges of today and the future.

# SCHOOL OF ENGINEERING

engineering.unm.edu

# **SPEAKER BIOGRAPHIES**

# **EMILY ALLEN**



Dr. Emily Allen is Dean of the College of Engineering, Computer Science, and Technology at California State University, Los Angeles, where she created the Acceleration Initiative, comprised

of a series of outreach and early career undergraduate programs to ensure students are well-prepared for their studies and have available all the necessary support to achieve academic and professional success. Under her leadership the College launched the donorfunded Sikand Center for Sustainable and InTelligent Infrastructure (SITI-Center), a research unit devoted to bringing faculty, students, and private and public sector entities together to work on sustainable solutions for Los Angeles and beyond.

Dr. Allen previously served San José State University as Associate Dean, Chair and faculty in Materials Engineering. She earned her BS in Metallurgy and Materials Science from Columbia University, and her MS and PhD in Materials Science and Engineering from Stanford University. She started her technical career as a welder, then attended community college before entering a four-year engineering program. Dr. Allen chaired the ASEE Engineering Deans Council Diversity Committee, where she led the operationalization of the Deans Diversity Recognition Program. She serves as an ABET EAC commissioner, chaired the ABET Ad Hoc Committee on Diversity and Inclusion and serves on the Board of the Society of Hispanic Professional Engineers.

## **ROSALYN BERNE**



Rosalyn W. Berne, Ph.D. is the Anne Shirley Carter Olsson Professor of Applied Ethics in the School of Engineering and Applied Sciences at the University of Virginia. She also directs the On-

line Ethics Center for Engineering and Science (OEC). As a scholar, Berne explores the intersecting realms of emerging technologies, science, fiction, and myth, and the links between the human and non-human worlds. Published under her name are two academic books; a science fiction novel; two award-winning books in the genre of body-mind-spirit, and numerous papers and articles. On leave from UVA from 2009 to 2011, she served as Vice President for Academic Affairs for the Institute for Shipboard Education. On leave from 2018 to 2020, she served as Director of the Center for Engineering Ethics and Society at the National Academy of Engineering. Professor Berne is an emerita advisor to the "Engineering One Planet" project of the Lemelson Foundation; advisor to the Kern Family Foundation KEEN project: "Educating the Whole Engineer"; a Standing Council Member of the Engineering Research Visioning Alliance (ERVA); a recently appointed member the NASEM Committee on Geological and Geotechnical Engineering; and serves on the ethics committee of the American Society for Engineering Education.

# **EDL SCHAMILOGLU**



Edl Schamiloglu was born in The Bronx, NY. He received the B.S. degree from the Applied Physics and Applied Mathematics Department at Columbia University, NY, 1979; he received the M.S. degree

in 1979; he received the M.S. degree in Plasma Physics from Columbia University in 1981; he received the Ph.D. degree in Engineering (minor in Mathematics) from Cornell University, Ithaca, NY, in 1988. He joined the University of New Mexico (UNM) as Assistant Professor in 1988 and he is currently Distinguished Professor of Electrical and Computer Engineering and Associate Dean for Research and Innovation in the School of Engineering. He is also the Special Assistant to the Provost for Laboratory Relations. He is the founding Director of the recently awarded UNM Directed Energy Center. He is a Co-PI on the NSF Engineering Research Visioning Alliance.

Professor Schamiloglu is a Fellow of the IEEE and a Fellow of the American Physical Society. He has received numerous awards, most recently the 2019 (inaugural) IEEE NPSS Magne "Kris" Kristiansen Award "For outstanding contributions in experimental nuclear and plasma science."



# **SPEAKER BIOGRAPHIES**

# P.J. BOARDMAN



P.J. Boardman is the Director of Education Marketing at Math-Works, managing a worldwide education marketing team responsible for product and technology

strategy, publishing programs, online learning and digital marketing from higher education through K-12. She is the Chair-Elect of the American Society for Engineering Education (ASEE) Corporate Membership Council and the liaison for the P12 Commission as well as a member of the Executive Committee for the Global Engineering Dean's Council (GEDC). Prior to joining MathWorks in 2014, P.J. was a Vice President of Cengage Learning and Pearson Education. P.J. has a B.A. in Mathematics from the College of the Holy Cross and an MEd from the University of Massachusetts in Instructional Design. She is a Rotary International Ambassadorial Scholar where she attended the Universidad de Santiago, Santiago de Compostela, Spain.In 2014, she was invited to the White House College Opportunity Summit recognizing leaders like Karen for their commitment to STEM education. She also serves on numerous local and national boards including the Epsilon Pi Tau Honor Society and Hartford High's Academy of Engineering and Green Technology.

## **STEVE CHISHOLM**



Steve Chisholm is the Vice President and Chief Engineer for Boeing Mechanical and Structural Engineering. In this capacity, he is responsible for independent technical oversight for safety,

quality and integrity, and he leads the establishment of the technical roadmap for the function. Steve ensures the development, application and curation of design practices, and he drives the replication of best practices for Mechanical and Structural Engineering across the Boeing enterprise.

Previously, Steve was the Boeing Commercial Airplanes (BCA) Vice President and Senior Chief of Structures Engineering. In this capacity, he set the Structures technical direction and technology readiness for Structures, ensuring overall structural integrity of Boeing's products and services across all the commercial offerings, and for our future products.

Chisholm is a strong supporter of airplane safety. He was an Authorized Representative, has long been involved in safety and compliance issues, and he was a member of the Boeing Technical Fellowship before entering management. Chisholm has been an active member of several airplane accident investigations and continues to provide leadership to the structures team that supports investigations.

In addition to his responsibilities at Boeing, Steve is the executive focal for the University of Washington and a member of the university's visiting committee for the college of engineering. He also serves on the Industry Advisory Board for the American Society of Mechanical Engineers (ASME) and as part of ASME's Committee on Engineering Education. Steve is passionate about the next generation of engineers and allyship for those who are underrepresented in engineering.

Chisholm joined Boeing in 1986 as a structural stress analyst on the 747 and 767 programs. He holds a Bachelor of Science in mechanical engineering from the University of Washington and a Masters in business administration from Seattle University.

# CHRISTOS CHRISTODOULOU



Christos Christodoulou received his Ph.D. degree in Electrical Engineering from North Carolina State University in 1985. In 1999, he joined the faculty of the Electrical and Computer Engineering

Department of the University of New Mexico, where he served as the Chair of the Department from 1999 to 2005. He is one of the founders of COSMIAC (SOE research Center for Space Electronics) and served as a director of the center from 2012 to 2014. He is an IEEE Fellow, a member of Commission B of the U.S. National Committee (USNC) for URSI, and a Distinguished Professor at UNM. Currently, he serves as the Dean for the School of Engineering. He has given numerous invited talks all over the world, published about 600 papers in journals and conferences, written 17 book chapters, co-authored 9 books, and has several patents. Over his acadenic career he has served as the major advisor for over 40 PhD and 75 MS students and received over \$60M in funding as a PI and Co-PI from several federal agencies and industry.

# **EMMAANUEL G. COLLINS**



Dr. Emmanuel G. Collins has served as the ninth dean of the J. B. Speed School of Engineering since May 17, 2018. As Dean, he has focused on raising the research

profile of Speed School, in part, by strengthening the university-wide research centers and institutes directed by the school's faculty. In recent years, the school has experienced a dramatic increase in research productivity. Another important focus has been attracting and retaining a diverse student body, representative of the ethnic, geographical, and income diversity of this region, which is at the intersection of the South and Midwest.

Dr. Collins previously served as the John H. Seely Professor and Chair of the Department of Mechanical Engineering at the Florida A&M University-Florida State University (FAMU-FSU) College of Engineering. He was also founder and of that institution's Center for Intelligent Systems, Control and Robotics (CIS-COR), which he directed until his departure to Speed School.

Dr. Collins holds a BS in Interdisciplinary Science from Morehouse College and a Bachelor's of Mechanical Engineering from the Georgia Institute of Technology. From Purdue University, he holds a MS in Mechanical Engineering and a PhD in Aeronautics and Astronautics.

Dr. Collins is a Fellow of the American Society of Mechanical Engineers. For "contributions in demonstrating active control of flexible spacecraft" he received the Honorary Superior Accomplishment Award from NASA Langley Research Center. He is also the recipient of the Black Engineer of the Year Award for College-Level Promotion of Education and the Outstanding Aerospace Engineer (OAE) Award from the Purdue School of Aeronautics and Astronautics.

### **GERALD DEREN**



Mr. Deren has spent the past 39 years primarily focused on helping companies and customers find ways to optimize their product and/or process develop-

ment methods. His work has resulted in finding ways to improve their efficiency, reduce development costs and help them develop a competitive advantage. As a process SME and thought leader, he focuses on improving quality, reducing cycle time or purely improving efficiency and execution through the use of enabling technology, process optimization and skill enhancement. (People, Process and Technology). He represents the voice of the customer and coach's and counsel's improvement into solution development.

Gerry currently leads a team of Academic Enablement professionals across the Americas for Siemens Digital Industries Software (DISW) focused on helping pave the way for students and academia to become "relevant" for manufacturers as they face the challenges of skill retainment, and sustainment within their innovation, validation and manufacturing lifecycles.

Mr. Deren is the originator of a Siemens Academic Enablement and Workforce Development Program named Adopt-A-University that is focused on establishing / building the, OEM to SMB to Academia (K-12 through Higher Ed) ecosystem consisting of engineering and digital manufacturing program domains including curriculum adaptation, research and joint projects. He represents Siemens on many Advisory Boards is a well-known speaker on Industry 4.0, and other model-based topics (Such as the Digital Twin) related to business process improvement, global supply chain collaboration and product lifecycle management.

He joined Computervision in 1980 as a Systems Engineer before he became part of a team that invented product lifecycle management business consulting. He joined Siemens to develop their business development organization in 1998.

# EDI 2022

# **SPEAKER BIOGRAPHIES**

# **SOLOMAN DIAMOND**



Solomon Diamond received an AB degree in Engineering Sciences from Dartmouth College in 1997, a BE degree from the Thayer School of Engineering in 1998,

and a PhD in Engineering Sciences from Harvard University in 2004. He conducted postdoctoral training at the Martinos Center for Biomedical Imaging at Massachusetts General Hospital. He is currently an Associate Professor of Engineering at Dartmouth where he teaches the ENGS 89/90 capstone engineering design sequence, ENGS 146 Computer-Aided Mechanical Engineering Design, and serves as the Co-Director of the Design Initiative at Dartmouth (DIAD). Sol's research is in the area of biomedical engineering where he focuses on in vivo biosensing of immunotherapy treatment response in the tumor microenvironment with magnetic nanoparticles. This multidisciplinary research is facilitated by collaborations at the Norris Cotton Cancer Center where Sol is a Member of the Translational Engineering in Cancer (TEC) Research Program. Sol is also the Co-Founder and CEO of Lodestone Biomedical where he is commercializing the biosensor technology to increase the success rate of drug development in immuno-oncology.

## **XAVIER FOUGER**



An Industrial Engineer, former Science Attaché in Vienna, Xavier Fouger joined Dassault Systemes in 1990. He developed new innovation processes for various automotive manufacturers in Germany and

Korea. He created the corporate organization in charge of global academia. He designed cutting edge learning initiatives for secondary and vocational education in the USA, Malaysia, Canada and France where he introduced a STEM program for 11,500 middle/high school students. He initiated PLM (Product Lifecycle Management) competency centres in India, China, Brazil, Mexico, Colombia, South Africa, Kenya, Ivory Coast, Vietnam and Argentina.

He manages Dassault Systemes' Learning Lab which conducts collaborative educational research with various universities, funded by US and European agencies on the use of digital technologies applied to educational methods and to the development of learning of emerging engineering practices.

Methodological research areas of the Lab are on virtual labs, collaborative engineering, 3D in MOOCs, Problem Based Learning and textbook virtualization.

Current research field in teaching emerging engineering practices all relate to the fourth industrial revolution: social innovation, precision agriculture, the Internet of Things, Additive Manufacturing, Smart farm/factory/building and Systems Engineering.

A founding member of IFEES 'International Federation of Engineering Education Societies) and GEDC (Global Engineering Deans Council), steering committee member of SEFI (European Society of Engineering Education), he provides lectures and seminars on innovation management in various engineering and business schools. He was awarded the 2016 Peter the First medal of the Association for Engineering Education of Russia for significant contribution to the development of engineering and engineering education

# ADIA HARVEY WINGFIELD



Adia Harvey Wingfield is the Mary Tileston Hemenway Professor of Arts & Sciences and Vice Dean for Faculty Development and Diversity at Washington University in St. Louis. Her re-

search examines how and why racial and gender inequality persists in professional occupations. Professor Wingfield has lectured internationally on her research in this area, and her work has been published in numerous peer-reviewed journals including Annual Review of Sociology, Gender & Society, and American Sociological Review. She has served as President of both Sociologists for Women in Society (SWS) and the Southern Sociological Society (SSS). In addition to her academic scholarship, Professor Wingfield writes regularly for mainstream outlets including Slate, The Atlantic, Vox, and Harvard Business Review. She is the recipient of multiple awards including the 2013 Richard A. Lester Award from Princeton University for her book No More Invisible Man: Race and Gender in Men's Work; the 2018 Public Understanding of Sociology award from the American Sociological Association; and the 2019 C. Wright Mills Award from the Society for the Study of Social Problems (SSSP) for her most recent book, Flatlining: Race, Work, and Health Care in the New Economy.

### **AYANNA HOWARD**



Ayanna Howard, accomplished roboticist, entrepreneur and educator Ayanna Howard, PhD, became dean of The Ohio State University College of Engineering on March 1, 2021. Previously

she was chair of the Georgia Institute of Technology School of Interactive Computing in the College of Computing, as well as founder and director of the Human-Automation Systems Lab (HumAnS). Her career spans higher education, NASA's Jet Propulsion Laboratory, and the private sector. Dr. Howard is the founder and president of the board of directors of Zyrobotics, a Georgia Tech spinoff company that develops mobile therapy and educational products for children with special needs. Zyrobotics products are based on Dr. Howard's research.

Dr. Howard also is a tenured professor in the college's Department of Electrical and Computer Engineering with a joint appointment in Computer Science and Engineering. As dean, she holds the Monte Ahuja Endowed Dean's Chair, which was established in 2013 through a generous gift from Distinguished Alumnus Monte Ahuja '70. Dr. Howard earned her bachelor's degree in computer engineering from Brown University, her master's degree and PhD in electrical engineering from the University of Southern California, and her MBA from Claremont Graduate University.

### **RON HYMAN**



Ron Hyman, Liaison's executive director of EngineeringCAS joined Liaison in 2015. He is responsible for the Engineering-CAS platform, the only centralized application service for

graduate programs of engineering. He works closely with engineering schools and strategic partners to bring the benefits CAS to engineering education. He also oversaw the creation of the EngineeringCAS Advisory Board and the recently launched EngineeringCAS Diversity, Equity and Inclusion Advisory Board.

In 2006, Ron co-founded Avow Systems, the first provider of secure electronic PDF transcripts for higher ed. As General Manager, he was responsible for all aspects of the company. In 2012, Avow was acquired by Parchment, where Ron was senior vice president and was instrumental in the integration of the two companies.

## **ARVIND KRISHNA**



Chairman and Chief Executive Officer of IBM

Arvind Krishna is the Chairman and Chief Executive Officer of IBM. As a business leader and technologist, he has led

the building and expansion of new markets for IBM in artificial intelligence, cloud, quantum computing, and blockchain. He has also

# **SPEAKER BIOGRAPHIES**

played a significant role in the development of innovative IBM products and solutions based on these emerging technologies.

Over his 30-year career at IBM, Arvind led a series of bold transformations and delivered proven business results. He most recently drove the successful \$34 billion acquisition of Red Hat – the largest software acquisition – that has defined the hybrid cloud market. Together, IBM and Red Hat give clients the unique ability to build mission-critical applications once and run them anywhere.

Arvind previously was senior vice president of Cloud and Cognitive Software, where he pioneered the company's hybrid cloud business, transformed IBM's entire software and services portfolio and offerings for cloud, and grew the business. He also headed IBM Research, where he drove innovation in core and emerging technologies including artificial intelligence, quantum computing, blockchain, cloud platform services, data-driven solutions, and nanotechnology. In 2016, Wired Magazine selected Arvind as "one of 25 geniuses who are creating the future of business" for his foundational work on blockchain.

As general manager of IBM Systems and Technology Group's development and manufacturing organization, Arvind led the strategy for data-centric systems and the widespread industry adoption of open and collaborative technology standards. He also grew the IBM Information Management business by 50 percent.

At IBM, Arvind has been an outspoken advocate for learning at every stage of one's career. He has made scientific contributions in a number of technical fields, including wireless networking, security, systems, and databases. In addition, he founded IBM's security software business and helped create the world's first commercial wireless system.

Arvind has an undergraduate degree from the Indian Institute of Technology, Kanpur (IITK) and a Ph.D. from the University of Illinois at Urbana-Champaign. He is the recipient of distinguished alumni awards from both institutions.

# **JAVIER A. KYPUROS**



Dr. Javier Kypuros has served the The University of Texas (UT) System for over 20 years. He is the Dean and Brazzel Endowed Professor of Engineering at The University of Texas at Tyler

College of Engineering, which is ranked 75th in US News & World Report for Best Undergraduate Engineering Programs. UT Tyler has a multi-campus college of engineering with programs in Tyler and Houston and is the only institution in all East or North Texas offering all four primary engineering disciplines - Chemical, Civil, Electrical, and Mechanical Engineering. Prior to joining UT Tyler in the summer of 2017, Javier served as the Associate Dean for Academic Affairs at the College of Engineering and Computer Science at The University of Texas Rio Grande Valley (UTRGV, formerly The University of Texas Pan American or UTPA). He served as a faculty member in the Department of Mechanical Engineering for 15 years at UTRGV/UTPA and prior to that at The University of Texas at El Paso (UTEP) in the then Department of Mechanical and Industrial Engineering. He has been recognized by the UT System with the Regents' Outstanding Teaching Award in 2014, by his students with the UTPA Outstanding Faculty Member in Mechanical Engineering Award in 2015, and by his colleagues with the UTPA College Excellence Award for Service in 2012 and the UTPA College Excellence Award for Teaching in 2011. In 2013 he published the leading undergraduate-focused textbook for dynamic systems modeling using bond graphs entitled System Dynamics and Control using Bond Graph Modeling. He has coauthored dozens of publications including works on innovative approaches and methods to improve student success and persistence especially amongst underserved populations. He has been awarded millions in external funding from federal and corporate sources. Presently, he serves on the American Society of Engineering Education (ASEE) Engineering Deans Council (EDC) Executive Board, the ABET Academic Advisory Council, and the Society of Hispanic Professional Engineers (SHPE) Academic Partnership Council. After receiving his Bachelor of Science

degree in Mechanical Engineering at Princeton University in 1996, he went on to earn master's and doctorate degrees in Mechanical Engineering from The University of Texas at Austin in 1998 and 2001.

### **MARK MATSUMOTO**



Mark Matsumoto is the Dean of the School of Engineering at the University of California, Merced. Over his academic career, Dr. Matsumoto's research efforts have focused on novel and

innovative systems for water quality restoration and improvements with applications towards water reuse, hazardous waste site remediation, and surface and ground water quality improvements. He is a Board Certified Environmental Engineering Member of the American Academy of Environmental Engineers and Scientists (AAEES) and Fellow of the American Association for the Advancement of Science (AAAS). He received his B.S. degree in Engineering from the University of California, Irvine, and M.S. and Ph.D. degrees in Engineering from the University of California, Davis.

## **RICHARD MILLER**



Richard K. Miller was appointed President and first employee of Olin College of Engineering in 1999; in June 2020 he became President Emeritus and Professor of Mechanical Engineering; He

then served as the Jerome C. Hunsaker Visiting Professor of Aerospace Systems at MIT (2020-21). Previously, he served as Dean of Engineering at the University of Iowa, Associate Dean of Engineering at USC, and assistant professor of engineering at UCSB. Miller is a Fellow of the American Academy of Arts & Sciences and the National Academy of Inventors, and a Member of the National Academy of Engineering. He is co-recipient of the NAE Bernard M. Gordon Prize for Innovation in Engineering and Technology Education twice—in 2013 and again in 2022, among other awards. He also received the Caltech Distinguished Alumni Award and the Distinguished Engineering Alumnus Award from UC Davis. Miller has served as Chair of the NASEM Board on Higher Education and Workforce, as Chair of the NSF Engineering Advisory Committee, and on advisory boards for Harvard, Stanford, USMA at West Point, Lemelson Foundation, and others. In addition, he has served as a consultant to the World Bank in the establishment of new universities in developing countries. Miller earned his BS at UC Davis, SM from MIT, and PhD from Caltech.integration of the two companies.

### **CYNTHIA MURPHY-ORTEGA**



Cynthia Murphy-Ortega is currently Manager of University Partnerships and Association Relations of Chevron Corporation. Her organization manages Chevron's relationships with

universities and professional societies and institutes throughout the world. Cynthia joined Chevron in 1991 as an engineer with the Richmond Refinery in the San Francisco Bay Area. She held various engineering, maintenance, operations, financial, business planning and process safety management positions within the refinery.

Cynthia then went on to work in the technology arena with the Chevron Energy Technology Company in 1998. She developed and managed Chevron's technical competency development programs for new hires in refining and exploration & production roles. She also worked in the Process Planning Group and performed process modeling on large-scale projects. In her role as Organizational Capability Manager with the Process, Analytical and Catalysis Dept, she supported technical competency management, staffing/recruitment, new hire and competency development, and business planning.

# EDI 2022

# **SPEAKER BIOGRAPHIES**

# **MARY NICHOLS**



Mary Nichols currently serves as the Co-Chair of the Coalition for Reimagined Mobility, as Vice Chair of the California-China Climate Institute with former Governor Edmund J. Brown of California, holds visiting

appointments at Columbia University's Center on Global Energy Policy and Cornell Atkinson Center for a Sustainable Future, is a fellow at the American Academy of Arts and Sciences, and a professor of Law at UCLA. In December 2020 Nichols completed her long tenure at the California Air Resources Board (CARB), a post she has held since 2007. She also served as Chair of the Air Resources Board from 1979-1983. Under Republican and Democratic governors, Nichols oversaw the development and implementation of multiple globally recognized programs to cut air pollution and greenhouse gas emissions in ways that create jobs and support economic growth. During her leadership at the CARB, California became a national leader at developing clean energy and clean transportation solutions that many other states and nations have adopted. Nichols brings a large area of expertise drawing from her many other positions, including bringing the first litigation under the then-recently passed U.S. Clean Air Act while working at the Center for Law in the Public Interest from 1971-1974. From 1993-1997, Nichols served as Assistant Administrator of Air and Radiation for the U.S. Environmental Protection Agency under President Bill Clinton. Her efforts there led to the first federal air quality standard regulating potentially deadly fine-particle pollution and the acid rain trading program. Nichols has also served as the California Secretary for the Natural Resources Agency from 1997-2003, as Executive Director of Environment Now Foundation; founder of the Los Angeles Office of Natural Resources Defense Council; Professor and Director at UCLA Institute of Environment: and co-founder of the first environmental justice working group, a multi-ethnic forum for leaders from traditional environmental and community-based organizations to address issues of environmental equity. Nichols received her B.A. from Cornell University and her J.D. from Yale Law School.

# **RUDI NGNEPI**



Rudi Ngnepi earned bachelor's and Master's degrees in Electrical Engineering from the University of Oklahoma and has12 years of industry experience working for National Instruments, a technology leader in

the Test and Measurement space.

With a passion for entrepreneurship and talent development, Rudi co-founded a branch of National Instruments' Planet NI program to focus on Africa. He drove public and private partnerships, developed global mentorship models, all geared to enable individuals to solve local challenges.

In 2017, he took on the role of Head of Global Talent Acquisition, Workforce Planning and HR Business Analytics within the Global Human Resources organization at NI. He led the organization through the modernization of recruitment across NI's 45+ global offices and implementing strategic workforce planning to meet future business needs.

In 2019, he was promoted to Global Director and just launched the company's first comprehensive new graduate strategy with a purpose of accelerating time to promotion for entry level talent with a focus on 50% diversity for new grads, a 6 weeks long onboarding program and a newly created rotation program.

In June 2021, Rudi took on a new role as Global Director, Sales Enablement Platforms, with the primary responsibility to ensure that we can effectively disseminate business content to all of our channels (direct Sales, indirect sales, partners).

Outside of work, Rudi is the incoming President of the African Leadership Bridge which is an organization with the mission of championing the next generation of African leaders through.

# **OLGA PIERRAKOS**



Olga Pierrakos is the Founding Chair and Professor of the Wake Forest University Department of Engineering, a program committed to Educating the Whole Engineer.

Wake Forest Engineering combines an integrated and engaged liberal arts engineering education with the innovation of a research university. Curricular innovation and interdisciplinary bridges have supported Wake Forest Engineers to combine engineering with over 25 minors, study abroad experiences, and high impact experiential learning. Pedagogical innovation and an inclusive culture have led to a student body of 40% women and 20% students of color. As a biomedical engineer, Olga conducts research in cardiovascular fluid mechanics. As an engineering education researcher, Olga conducts research on character education in engineering, engineering identity development, organizational culture change, and complex problem solving. Prior to Wake Forest, Olga served as Program Director in the Division of Undergraduate Education at the National Science Foundation and co-led several programmatic initiatives to transform STEM education. Being her second time as a founding faculty of a new engineering program, she brings a wealth of insight around fostering a collaborative and entrepreneurial culture, facilitating change towards inclusion and equity, and leading pedagogical innovations.

### SCOTT SHIREMAN



Scott Shireman is the Global Head of Coursera for Campus (C4C) at Coursera. In this role he leads the C4C business globally and advises university leaders around the world on how they can build the universi-

ties of the future.

Scott has over twenty years of leadership experience in higher education with deep experience in global and online education. Prior to joining Coursera, he was an Associate Dean at UC Berkeley where he led multiple programs to train the global workforce and increase access for students from around the world and worked closely with schools, colleges, and faculty from across the university to develop innovative new graduate degree programs. He previously served as the founding Director of the Berkeley Resource Center for Online Education, a department at UC Berkeley that worked closely with schools and colleges to support online innovation and develop new online degree programs, certificates, and courses.

Scott earned his BA and MBA from Northwestern University where he also previously served as the Chief Information Officer at the Kellogg School of Management.

### **DORA SMITH**



Dora Smith directs the global academic program for Siemens Digital Industries Software. Under her leadership, the global academprogram is a strategic initiative for the company. The program em-

powers the next generation of digital talent through industrial strength software and curriculum, project-based learning, and STEM competitions to support more than 1.5 million students and more than 4,000 institutions worldwide. Dora serves in academic-industry advisory roles as chair of the American Society for Engineering Education's Corporate Member Council and as director and vice president for Diversity and Inclusion on the International Federation of Engineering Education Societies executive committee. Dora earned her bachelor's degree in journalism from University of Missouri-Columbia and a master's in business administration from Washington University. She is an accredited business communicator with more than 25 years of experience in the engineering and manufacturing industry with leadership roles across disciplines.

## **DR. KYLE SQUIRES**



Dr. Kyle Squires is the dean the Ira A. Fulton Schools of Engineering at Arizona State University and vice provost for Engineering, Computing and Technology. Appointed in Feb-

ruary 2016, Squires previously served as vice and interim dean, as well as the director of the School for Engineering of Matter, Transport and Energy, one of the seven Fulton Schools of Engineering. A professor of mechanical and aerospace engineering, Squires holds a B.S. in mechanical engineering from Washington State University and M.S. and Ph.D. degrees in mechanical engineering from Stanford University. Squires' expertise encompasses computational fluid dynamics, turbulence modeling of both single-phase and multiphase flows, and high-performance computing.



# **SPEAKER BIOGRAPHIES**

# **JOE SUSSMAN**



Joe Sussman is both Chief Accreditation Officer and Chief Information Officer for ABET. Since 2011, he has led ABET's global accreditation operations, collaborating with the organiza-

tion's volunteer leadership in both tactical execution and strategic development of ABET's accreditation practice.

Prior to joining ABET, Sussman spent 26 years as an engineering leader and senior business executive at Bayer AG, leading many of the company's quality, manufacturing and IT efforts. After retiring from Bayer, he joined Deloitte Consulting, where he worked with many prominent global clients.

In addition to his industry background, and prior to joining ABET staff, Sussman served ABET for 24 years in nearly every volunteer capacity, including program evaluator, chair of the Engineering Accreditation Commission, representative director from ASME on the ABET Board of Directors and 2008-2009 ABET President.

Sussman earned his baccalaureate, master's and doctoral degrees in mechanical engineering from Columbia University. He is a fellow of ABET and ASME. In 2015, he was presented the Linton E. Grinter Distinguished Service Award for his decades of service to ABET.

Sussman and his wife Sari are PADI Certified Advanced Open Water scuba divers. When they can escape their home in New York City, they love drift diving off the coast of Cozumel in Mexico.

# **ROBERT ULMER**



Robert R. Ulmer is dean of the UNLV Greenspun College of Urban Affairs. Dr. Ulmer has worked extensively with organizational and community leaders on communication aspects during a crisis.

He has co-authored Effective Crisis Communication. Moving From Crisis to Opportunity and its 4th edition was released in 2019. He has extensive experience putting these ideas into practice having worked with the Centers for Disease Control, U.S. Department of Homeland Security, and public and private companies.

### **VIJAY KUMAR**



Dr. Vijay Kumar is the Nemirovsky Family Dean of Penn Engineering with appointments in the Departments of Mechanical Engineering and Applied Mechanics, Computer and Informa-

tion Science, and Electrical and Systems Engineering at the University of Pennsylvania. He received his Bachelor of Technology from the Indian Institute of Technology, Kanpur and his Ph.D. from The Ohio State University in 1987.

Kumar has served as the assistant director of robotics and cyber physical systems at the White House Office of Science and Technology Policy (2012 – 2013). He is a founder of Exyn Technologies and serves on the boards of Treeswift, IQ Motion Control, WeRobotics, and O2Micro. He is a Fellow of the American Society of Mechanical Engineers (ASME) and the Institute of Electrical and Electronic Engineers (IEEE), and an elected member of the National Academy of Engineering, the American Philosophical Society, and the American Academy of Arts and Sciences.

Dr. Kyle Squires is the dean the Ira A. Fulton Schools of Engineering at Arizona State University and vice provost for Engineering, Computing and Technology. Appointed in February 2016, Squires previously served as vice and interim dean, as well as the director of the School for Engineering of Matter, Transport and Energy, one of the seven Fulton Schools of Engineering. A professor of mechanical and aerospace engineering, Squires holds a B.S. in mechanical engineering from Washington State University and M.S. and Ph.D. degrees in mechanical engineering from Stanford University. Squires' expertise encompasses computational fluid dynamics, turbulence modeling of both single-phase and multi-phase flows, and high-performance computing.

### **KAREN WOSCZYNA-BIRCH**



Dr. Karen Wosczyna-Birch has been a champion of engineering and technology education for the past 30 years. Since 1995, she has been the state director of the CT College of Technol-

ogy (COT) where her leadership has been instrumental in creating nationally recognized seamless pathway programs in engineering and technology between all 12 public community colleges in CT with 10 universities and high schools. She is also the Executive Director and Principal Investigator of the National Center for Next Generation Manufacturing (NCNGM), a National Science Foundation (NSF) Center of Excellence and a Professor of Applied Technology at Tunxis Community College. Since 2004, she has received over \$25M in funding from the NSF, including two grants for international partnerships. Karen has implemented strategies resulting in an increase in the enrollment of underrepresented populations in STEM programs at the community colleges.

Karen has received numerous awards for her accomplishments as a professor and for her passion for increasing the diversity of the STEM population including the 2016 Distinguished Service Award from the international honor society Epsilon Pi Tau (EPT), the 2018 CT Women of Innovation Award in the Postsecondary Academic Innovation & Leadership Category, the 2012 New England Board of Higher Education Excellence Award for the State of CT and most recently, the 2020 HI TEC Innovative Program of the Year Award and 2021 ITEEA Special Recognition Award. In 2014, she was invited to the White House College Opportunity Summit recognizing leaders like Karen for their commitment to STEM education. She also serves on numerous local and national boards including the Epsilon Pi Tau Honor Society and Hartford High's Academy of Engineering and Green Technology.

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# MAKING A REAL IMPACT IN OUR WORLD

Florida International University's College of Engineering and Computing is an innovative research powerhouse. FIU is making a real impact as a national leader in research and is a top 20 patent producer among public universities. The College of Engineering and Computing's annual patent production has jumped 76% since 2017, with a total of 44 in one year. In FY2021, the college received more than \$59M in research awards.

FIU's College of Engineering and Computing is one of the largest in the nation with nearly 8,000 students and more than 1,100 graduate students. The college is a top producer of minority engineers, most notably the No. 1 producer of Hispanic engineers and No. 11 producer of African American engineers in the continental U.S.

Our TOP 50 public programs give students the tools to make a Real Impact in our world.

#1 producer of **Hispanic engineers** 

#46

**Computer Science** 

and Information

QS World University Rankings

#11 producer of African American engineers

#46 Electrical and **Electronics Engineering** U.S. News & World Report — Global Rankings

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