



Member Biographies

TILAK AGERWALA is retired vice president, Systems, at IBM Research. He was responsible for developing the next-generation technologies for IBM's systems, from microprocessor architecture and design to commercial systems and supercomputers, as well as novel Supercomputing algorithms, systems software and applications. He currently leads TKMA Consulting. Agerwala joined IBM in 1979 at the T.J. Watson Research Center and has held executive positions at IBM in research, advanced development, development, marketing and business development. His research interests are in high performance computer architectures and systems.

Agerwala is a founding member of the IBM Academy of Technology, and a Fellow of the Institute of Electrical and Electronics Engineers. He has given over 100 invited technical presentations and Keynote talks at conferences, universities, and National Laboratories worldwide. He received his B.Tech. in electrical engineering from the Indian Institute of Technology, Kanpur, India, and his Ph.D. in electrical engineering from Johns Hopkins University, Baltimore, Maryland.

GRETCHEN BAIER is currently Executive External Strategy and Communications Leader at Dow, where she is responsible for monitoring for disruptive technologies, applying for external awards that recognize Dow products or researchers, and being the R&D liaison to Dow's sustainability goals. Previously, she was Associate R&D Director of External Technology, leading a group responsible for creating strategic external research collaborations. Earlier she was a technical leader in Ventures and New Business Development and a chemical engineer in the Process Optimization group and the Process Separations Skill Center.

Baier is on the Visiting Committee for Chemical Engineering at MIT, the Advisory Board for the MIT Practice School, the Standing Committee for the NSF Engineering Research Visioning Alliance, and Advisory Board for the Michigan Materials Research Institute at the University of Michigan. Other recent responsibilities have included Chair of the Advisory Board for the Department of Energy Critical Materials Institute, and co-Chair of the University-Industry Demonstration Partnership Project Committee. She has held Board positions for ASTRA and the Council of Chemical Research, as well as a member of the Industrial Research Institute's External Technology Network.

Prior to joining Dow, Baier was a process engineer at Dow Corning Corporation and later at Shell Oil Company. She has a B.S. in chemical engineering from M.I.T. and a Ph.D. from the University of Wisconsin at Madison.

CHARLES BOTT is the Director of Water Technology and Research for the Hampton Roads Sanitation District, which he joined in 2009. He manages technology innovation and research and development for HRSD's sixteen wastewater treatment plants (249 MGD combined capacity). Bott is also an adjunct



professor in the departments of civil and environmental engineering at Virginia Tech and Old Dominion University. He was formerly an associate professor in the department of civil and environmental engineering at the Virginia Military Institute (VMI) and a consulting engineer with Parsons Engineering Science.

Bott has a B.S. in civil engineering from the Virginia Military Institute, a M.S. in environmental engineering from the Johns Hopkins University, and a Ph.D. in civil and environmental engineering from Virginia Tech. He is a fellow of the Water Environment Federation (WEF) and a former member of the Science and Technology Advisory Committee to the Chesapeake Bay Program Executive Council. Bott is a Professional Engineer in Virginia, a Board-Certified Environmental Engineer, and a licensed Wastewater Treatment Plant Operator – Virginia Class I. He is a two-time winner of the WEF Harrison Prescott Eddy Medal for outstanding contribution to wastewater principles/processes research, he was a previous member of the WEF Board of Trustees, and he is a past co-chair of The Water Research Foundation and WEF Leaders Innovation Forum for Technology (LIFT) program.

Bott's technical interests include municipal and industrial wastewater treatment, as well as renewable energy generation. He has specific expertise in the areas of chemical and biological phosphorus removal, denitrification with alternative carbon sources, nitrification kinetics, nutrient recovery, deammonification/anammox, biological treatment process modeling and design, and biogas conditioning. Important areas of focus are mainstream shortcut nitrogen removal and technologies for potable reuse.

BIKA CARTER is the director of Global R&D Management at GlobalFoundries and oversees worldwide External R&D Partnerships. In this role she owns several strategic corporate R&D partnerships, the University Partnership Program and oversight for corporate-wide external R&D program management. Her past positions at GlobalFoundries include roles in the CTO and Business Development organizations. In these roles, she supported the CTO in R&D strategic planning and execution and negotiated key alliances with strategic partners to enhance the GlobalFoundries development pipeline.

Prior to GlobalFoundries, Carter worked as a technical business development manager for IMEC in Leuven, Belgium and managed a variety of technical projects under the CMOS technology group. She also worked as a product engineer at Intersil (previously Harris Semiconductor) and a process engineer at Texas Instruments. Carter holds a M.S. in materials science and engineering and a B.S. in electrical engineering, both from North Carolina State University.

Carter has been an active advocate of developing women engineers for many years. She is a steering member of Globalwomen (an internal program focused on developing women), active in external advisory roles at SWE and Women in Semiconductors, an ambassador for both Universities and K-12 programs, and mentors/coaches many early career women. Most recently, Carter championed and drove the launch of Global Journey, the first Career Re-Entry program at GlobalFoundries with a focus on targeting mid-career engineering women.



ROBIN N. COGER is an experienced leader with a demonstrated record of success in higher education. She is the Dean of the College of Engineering, and a Professor of Mechanical Engineering, at North Carolina Agricultural and Technical State University (N.C. A&T) in Greensboro, NC. Prior to joining N.C. A&T, Coger served as a Professor and Center Director at the University of North Carolina at Charlotte. Her career at UNC-Charlotte spanned more than 15 years, where she served as a dedicated educator, researcher, and administrator.

Coger's technical research expertise is in solving design and performance problems related to tissue engineered organs, with special emphasis on liver replacement devices and their safe storage for off-the-shelf availability. Her work has been supported by grants from the National Institutes of Health, the NSF, and the Whitaker Foundation; and has resulted in numerous journal and conference publications in the areas of liver tissue engineering and cryopreservation, one patent, and two patent applications. Coger has been awarded for her excellence in research, teaching, and mentoring over her career, and is actively engaged in collaborations that advance faculty, innovative ventures, and student competitiveness.

Coger is a fellow of the American Society of Mechanical Engineers and of the American Institute for Medical and Biological Engineering. She is also a board member of the Greensboro Chamber of Commerce; the Advancing Minorities Interest in Engineering organization; and *FIRST* – an organization founded to inspire the interest and participation of young people in engineering, science and technology. She also chairs the Council of HBCU Engineering Deans. Aligned with her understanding of the importance of sharing best practices and concepts among engineering educators, Coger is also a member of the editorial board of the American Society of Engineering Education publication, PRISM.

Coger earned a B.S. from Cornell University and her M.S. and Ph.D. from the University of California, Berkeley, all in mechanical engineering. Coger also completed her post-doctoral research as a fellow at Harvard Medical School and the Department of Surgery at Massachusetts General Hospital in Boston.

KARINA MONTILLA EDMONDS is a globally recognized visionary leader in the field of innovation, technology transfer, and commercialization. She currently serves as the Vice President and Global Lead for Academies and University Alliances at SAP. In this role, she is leading university partnerships that inspire, expose and educate students through engaging SAP curriculum. She also oversees the Sales and Engineering Academies which develop early talent and emerging leaders to build the best sales and engineering talent in the world.

Prior to joining SAP, Edmonds was the Global Lead for Cloud AI at Google in Sunnyvale, California. At Google, her primary role was to facilitate research collaborations in AI between Google Cloud and top academic researchers. Edmonds joined Google Cloud from the California Institute of Technology (Caltech) where she served as the Executive Director for Corporate Partnerships. At Caltech, she was responsible for implementing and managing an integrated strategy with the private sector and major federal funding agencies across numerous research areas.



Edmonds was appointed by the U.S. Secretary of Energy as the first full-time Technology Transfer Coordinator for the U.S. Department of Energy (DOE) in April 2010. In that role, Edmonds was responsible for working with the DOE's national laboratories to accelerate the advancement of discoveries from the laboratory to the marketplace. She has also held positions at the Jet Propulsion Laboratory and TRW, Inc. (now Northrop Grumman). Edmonds has co-authored two patent applications in the area of noise reduction for the automotive environment. As a Principal Research Scientist, her research at Northrop Grumman was in support of speech recognition for mobile applications.

Edmonds has been a long-standing advocate for the promotion of science, technology, engineering, and math (STEM) careers, especially for underrepresented students and women. She is a product of a STEM program herself and continues to serve as a role model and mentor to students across the country. She has been a keynote speaker, panelist, and awardee at innovation, clean energy, and STEM events across the country and has received numerous national recognition and awards. She has served as a member of the White House Speaker Bureau that promotes STEM careers to women and girls. Her advocacy for STEM spans several decades, including her role as a founding member and volunteer for Science is Fun Inc. (SIFI) while still an undergraduate at the University of Rhode Island (URI).

She frequently speaks at industry engagements and currently serves on the boards for the Institute for Pure and Applied Mathematics at the University of California, Los Angeles and was confirmed by the Rhode Island State Senate to the inaugural Board of Trustees for the University of RI in March 2020. Edmonds previously served on the boards of the URI Foundation, Caltech Alumni Foundation and ConnectEd California. She received a B.S. in Mechanical Engineering from URI, where she was inducted into its Engineering Hall of Fame in 2011 and was named a Distinguished Alumna in 2013. She holds an M.S. and Ph.D. in aeronautics with a minor in materials science from Caltech in Pasadena.

LEAH JAMIESON is Ransburg Distinguished Professor of Electrical and Computer Engineering at Purdue University, John A. Edwardson Dean Emerita of Engineering, and holds a courtesy appointment in Purdue's School of Engineering Education. She is co-founder and past director of the EPICS – Engineering Projects in Community Service program. She served as the 2007 President and CEO of the IEEE and 2012-17 President of the IEEE Foundation. She has been recognized with the National Academy of Engineering's Gordon Prize for Innovation in Engineering and Technology Education, the NSF Director's Award for Distinguished Teaching Scholars, the Anita Borg Institute's Women of Vision Award for Social Impact, the National Association of Multicultural Engineering Program Advocates (NAMEPA) Dean of Engineering Champion Award, was named 2002 Indiana Professor of the Year by the Carnegie Foundation, and presented the Simon Bolivar medal from the National Ministry of Education of Colombia.



Jamieson is a member of the U.S. National Academy of Engineering, the American Academy of Arts and Sciences, a Fellow of the IEEE and ASEE, an Eminent Member of IEEE-Eta Kappa Nu, and an Honorary Member of Tau Beta Pi. She has been an advocate and activist promoting the success of women in engineering and computer science both at Purdue and through national and global professional societies. Jamieson received her S.B. in mathematics from MIT and her Ph.D. in electrical engineering and Computer Science from Princeton University, and has been awarded an honorary doctorate from Drexel University. She joined the faculty of Purdue in 1976.

KIMBERLY L. JONES is associate dean for research and graduate education for the college of engineering and architecture, and professor and chair for the department of civil and environmental engineering at Howard University. She holds a B.S. in civil engineering from Howard University, a M.S. in civil and environmental engineering from the University of Illinois and a Ph.D. in environmental engineering from The Johns Hopkins University. She is a Fellow of the Association of Environmental Science and Engineering Professors (AEESP) and a member of the International Women's Forum. Her research interests include water and wastewater quality, environmental policy, membrane separations, global water treatment, environmental justice, risk evaluation and environmental nanotechnology.

Jones currently serves as a Presidential Appointee to the Board of Directors of the National Institute of Building Sciences. She has served on the Chartered Science Advisory Board of the U.S. Environmental Protection Agency, where she chaired the Drinking Water Committee and was liaison to the National Drinking Water Advisory Council. She currently serves on the Advisory Committee for Environmental Research and Education at the National Science Foundation, and the Committee to Advise the U.S. Global Change Research Program of the National Academies of Sciences, Engineering, and Medicine (NASEM). She is an alternate Commissioner of the Interstate Commission on the Potomac River Basin in Washington, DC., where she chairs the committee on justice, equity, diversity and inclusion (JEDI). She also serves on the Management Board of the Consortium for Risk Evaluation with Stakeholder Participation (CRESP) and as Associate Director for Diversity in the Urban Water Innovation Network (UWIN).

Jones has served on the Water Science and Technology Board of the National Academy of Sciences, and the Board of AEESP, where she was Secretary of the Board. She has served on several committees of the NASEM, including the Committee on Environmental Engineering for the 21st Century: Addressing Grand Challenges. She also served as the Deputy Director of the Keck Center for Nanoscale Materials for Molecular Recognition at Howard University and on the Center Steering Committee of the Center for the Environmental Implications of Nanotechnology (CEINT).



Jones has received the Researcher of the Year award from Howard University, a Top Women in Science Award from the National Technical Association, the Outstanding Young Civil Engineer award from University of Illinois Department of Civil and Environmental Engineering, a NSF CAREER Award, an Outstanding Leadership and Service and Outstanding Faculty Mentor award from Howard University, and Top Women Achievers award from Essence Magazine.

JAMES R. MARTIN II is the U.S. Steel Dean of Engineering at the University of Pittsburgh Swanson School of Engineering, and the tenth to serve as Pitt's dean of engineering since 1882. Prior to joining Pitt, Martin served as the Bob Benmosche Professor and Chair of the Glenn Department of Civil Engineering at Clemson University.

Prior to Clemson, Martin spent more than 20 years on the civil engineering faculty at Virginia Tech and served five years as director of the Disaster Risk Management Institute. His professional career focused on earthquake engineering and risk assessment of natural hazards. He taught undergraduate and graduate courses in geotechnical and earthquake engineering, foundation engineering and disaster risk management, among others.

Internationally recognized for his research on earthquakes, Martin has served as an earthquake engineering consultant on more than 100 major infrastructure projects for global corporations, engineering firms and government agencies, and has contributed to improved earthquake building code standards in the central and eastern United States. He is regularly called upon to serve on field teams after earthquakes strike and was the team leader for the NSF-sponsored study of the 2011 earthquake in Virginia and Washington, D.C., and has led similar studies in Turkey and Japan.

Martin earned a B.S. in civil engineering from The Citadel, and an M.S. and Ph.D. in civil engineering from Virginia Tech. He has received numerous national, state and university awards for research, teaching and professional service, including the American Society of Civil Engineer's Norman Medal, the highest honor for published work in his field. He was inducted into the civil engineering department's Academy of Distinguished Alumni at Virginia Tech in 2015.

ROBIN MURPHY is the Raytheon Professor of Computer Science and Engineering at Texas A&M University, director of the Humanitarian Robotics and Artificial Intelligence Laboratory and is a founding director of the Center for Robot-Assisted Search and Rescue. She helped found the fields of disaster robotics and human-robot interaction, concentrating on developing human-centered AI for ground, air, and marine robots. Her work is captured in over 150 scientific publications including the award-winning book *Disaster Robotics* and a TED talk. Murphy has deployed robots to over 27 disasters in five countries including the 9/11 World Trade Center, Hurricane Katrina, Fukushima, the Syrian boat refugee crisis, Hurricane Harvey, and the Kilauea volcanic eruption. Murphy's contributions to disaster robotics have been recognized with the ACM Eugene L. Lawler Award for Humanitarian Contributions, the AUVSI Foundation's AI Aube Award, and the Motohiro Kiso Award for Rescue Engineering Education.



FRANKLIN M. (“LYNN”) ORR, JR. served as Under Secretary for Science and Energy at the U.S. Department of Energy from December 2014 to January 2017. He was director of the Precourt Institute for Energy at Stanford from its establishment in 2009 to 2013. He served as director of the Global Climate and Energy Project at Stanford from 2002 to 2008. Orr was the Chester Naramore Dean of the School of Earth Sciences at Stanford University from 1994 to 2002. He has been a member of the Stanford faculty since 1985 and holds the Keleen and Carlton Beal Chair of Petroleum Engineering in the Department of Energy Resources Engineering, and he was a Senior Fellow at the Woods Institute for the Environment and the Precourt Institute for Energy. His research activities focus on how complex fluid mixtures flow in the porous rocks in the Earth's crust, the design of gas injection processes for enhanced oil recovery, and CO₂ storage in subsurface formations. Orr is a member of the National Academy of Engineering. He served as vice chair of the board of directors of the Monterey Bay Aquarium Research Institute until 2014 and rejoined that board in 2017. He chaired the Advisory Panel of the Packard Fellowships for Science and Engineering for the David and Lucile Packard Foundation until 2014, rejoining that panel in 2017, and was a foundation board member from 1999 to 2008. He is a member of the ClimateWorks Foundation Board of Directors.

ISMAEL PAGÁN-TRINIDAD is professor and chair of the department of civil engineering and surveying at the University of Puerto Rico at Mayagüez (UPRM) since 1994. He earned a B.S. and M.S. in civil engineering at UPRM. He also conducted Ph.D. studies (ABD) at the University of Illinois at Urbana-Champaign. His main professional interests focus on teaching and research initiatives to enhance engineering education for Hispanics to create pathways to advanced degrees in engineering which can help develop outstanding professionals and entrepreneurs in the nation's workforce. Pagán-Trinidad's main educational and research interests, presentations and publications have focused on tropical climate, hydrology, hydraulics, urban drainage, mitigation of natural hazards, engineering education, and resilience of civil infrastructure and integrated civil engineering design.

Pagán-Trinidad is the Principal Investigator of the project *Education for Improving Resilience of Coastal Infrastructure* sponsored by the Department of Homeland Security - Coastal Resilience Center of Excellence (DHS-CRC), which is co-led by the University of North Carolina at Chapel Hill and Jackson State University in Jackson, Mississippi. He is the liaison of the Educational and Research Partnership Agreement between UPRM and the Engineer Research and Development Center (ERDC). He has been the principal investigator and program manager of the UPRM-ERDC Internship Program for the past 28 years.

Pagán-Trinidad is a co-founding member of the board of the Puerto Rico Construction Cluster, which fostered initiatives to enhance sustainable activities and job opportunities that stimulate the Island's economic and infrastructure development. He is a co-founding member of the board of the Puerto Rico Materials Characterization Center, a Research Service Center serving the University of Puerto Rico and the Industrial Community of Puerto Rico. He is a founding member and vice president at large of the Latin American and Caribbean Consortium of Engineering Institutions (LACCEI).



Pagán-Trinidad is a member of the editorial board of the International Journal on Natural Disasters, Accidents and Civil Infrastructure published by the Department of Civil Engineering and Surveying, and he is affiliated with the American Society of Civil Engineers, the American Society of Engineering Education, and the American Association for the Advancement of Science.

LANCE C. PÉREZ was named dean of the University of Nebraska-Lincoln College of Engineering in May 2018, following two years as interim dean. An experienced academic and campus leader, Pérez previously was associate vice chancellor for academic affairs and dean of graduate studies at the university. He has been a faculty member in the Department of Electrical and Computer Engineering since 1995, where he holds the Omar H. Heins Professorship in Electrical and Computer Engineering.

In his previous administrative positions, Pérez was responsible for faculty and leadership development, promotion and tenure, instruction technology and classroom facilities' improvements, and graduate education. He led the implementation of \$30 million in improvements to academic facilities and played a pivotal role in the university's entrance into the Big Ten Committee on Institutional Cooperation.

As a faculty member, he has won numerous teaching awards and has been principal investigator or co-principal investigator on more than \$15 million in federally funded research. His research interests include signal and information processing, engineering education and faculty leadership development. From 2008-10, Pérez was a program director in the Division of Undergraduate Education at the National Science Foundation.

He has a B.S. in electrical engineering from the University of Virginia, and an M.S. and Ph.D. in electrical engineering from the University of Notre Dame.

SARAH RAJALA is Dean Emerita of the College of Engineering at Iowa State University. She is a former president of the American Society for Engineering Education and chaired the Global Engineering Deans Council. She was named 2016 national engineer of the year by the American Association of Engineering Societies and received the 2015 national Harriett B. Rigas Award from the Institute of Electrical and Electronics Engineers Education Society honoring outstanding female faculty.

Rajala's previous leadership positions were at North Carolina State University as associate dean for research and graduate programs and associate dean for academic affairs in the college of engineering; and Mississippi State University as a department chair and dean of the Bagley College of Engineering. She had a distinguished career as a professor and center director prior to moving into administrative positions.

Rajala earned her bachelor's degree in electrical engineering from Michigan Technological University and master's degree and Ph.D. from Rice University. She is a fellow of the American Association for the Advancement of Science, the American Society for Engineering Education and the Institute of Electrical and Electronic Engineers.



JAMES H. THOMPSON serves as chief technology officer for Qualcomm Technologies, Inc. In this role he is responsible for global research and development activities associated with all wireless chipsets in QCT, Qualcomm's semiconductor business, as well as overseeing the companywide technical and product roadmaps across all business areas. Additionally, Thompson directs Qualcomm Research and Corporate Engineering.

Thompson has overseen hardware and systems engineering activities in QCT since 2001 and all QCT engineering since 2004. Prior to joining QCT, Thompson led Qualcomm's Globalstar engineering team and was also part of the team that developed the CDMA cellular standard. He has been a member of Qualcomm's executive committee since 2012.

Thompson received his bachelor's and master's degrees, as well as his doctorate in electrical and computer engineering from the University of Wisconsin-Madison. Thompson serves on the Wisconsin Alumni Research Foundation (WARF) Board of Trustees, a nearly 100-year-old foundation that supports research and technology transfer at the University of Wisconsin-Madison. He is also a member of the NSF Engineering Advisory Committee of the National Science Foundation as well as a member of the Council of Advisors for the Jacobs School of Engineering at the University of California, San Diego.