

**CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING
2018 NEW MEMBER SUMMARY**

ARNSTEN, AMY F. T.		Professor of Neuroscience and of Psychology, Yale School of Medicine, and Member, Kavli Institute of Neuroscience at Yale	
<u>Education:</u>	Brown University, BA, 1976, Neurosciences; University of California at San Diego, PhD, 1981, Neurosciences		
<u>Professional Area:</u>	Molecular influences on primate cortex, with focus on prefrontal cortical physiology and cognition; the effects of stress and aging on higher cortical function; the etiology and treatment of human cognitive disorders (e.g. aging, attention deficit hyperactivity disorder, schizophrenia, bipolar disorder, post-traumatic stress disorder, Alzheimer's Disease).		
<u>Citation:</u>	In recognition of the discovery of the molecular mechanisms that govern activity in the brain's highest-order circuits and helped explain why neurons are vulnerable to disorders such as schizophrenia and Alzheimer's disease. Her research has led to treatments now in widespread clinical use for treating childhood cognitive disorders such as Attention Deficit Hyperactivity Disorder and autism, and for the treatment of Post-Traumatic Stress Disorder.		
BOSE, ARINDAM		Founder and Sole-Organizer, AbiologicsB, LLC	
<u>Education:</u>	Indian Institute of Technology, 1975, B.Tech, Chemical Engineering; University of Michigan, 1976, MS, Chemical Engineering; Purdue University, 1980, PhD, Chemical Engineering		
<u>Professional Area:</u>	Business and Technology Strategy, Biotechnology, Bioengineering and Biosimilars		
<u>Citation:</u>	For innovations in the manufacture of biologics and service to the professional society organizations that represent the biopharmaceutical industry.		
BURKE, INGRID		Carl W, Knobloch, Jr. Dean and Professor of Ecosystem Ecology, School of Forestry and Environmental Studies, Yale University	
<u>Education:</u>	Middlebury College, 1980, BS, Biology; University of Wyoming, 1987, PhD, Botany		
<u>Professional Area:</u>	Dr. Burke is an ecosystem ecologist whose research has focused on carbon and nitrogen cycling in dryland ecosystems. Her work has addressed how drylands are influenced by land use management, climatic variability, and regional variability. She teaches in the fields of environmental science, ecosystem ecology, and biogeochemistry.		
<u>Citation:</u>	Internationally recognized for contributions to our understanding in the fields of terrestrial biogeochemistry and ecosystem ecology, and particularly for studies of nitrogen dynamics in grassland and steppe ecosystems.		
CARMICHAEL, GORDON		Professor, Genetics and Genome Sciences, UConn Health	
<u>Education:</u>	Duke University, 1970, BA, Physics; Harvard University, 1975, PhD, Biophysics; Swiss Institute for Experimental Cancer Research, 1977, Postdoctoral Fellow		
<u>Professional Area:</u>	RNA biology, RNA editing, RNA localization, Virology		
<u>Citation:</u>	For pioneering contributions to the field of RNA biology in mammalian cells and their viruses. His work has provided key insights into the mechanisms of splicing, polyadenylation and RNA export from the nucleus to the cytoplasm, as well as the mechanism of action of naturally-occurring antisense RNA regulation and RNA editing.		
CHAUDHRY, ZAFFIR A.		Technical Fellow, United Technologies Research Center	
<u>Education:</u>	Pakistan Air Force College of Aeronautical Engineering, 1978, BS, Aerospace Engineering; Air Force Institute of Technology, W-P Air Force Base, Ohio, 1985, MS, Aeronautical Engineering; Virginia Polytechnic Institute and State University, 1992, PhD, Mechanical Engineering		
<u>Professional Area:</u>	Smart/Adaptive Structures, Structural Health Monitoring, Prognostics and Health Management of rotating machinery/systems, solid-state and electro-mechanical actuation and sensing, tribology, lubrication and thermos-fluids of gears and bearings, high-speed bearings		
<u>Citation:</u>	For seminal contributions to the fundamental concepts of adaptive/smart structures; for leadership of several technologies to maturation and product insertion: helicopter rotor control with embedded actuators and surfaces, structural health monitoring with embedded sensors, in situ repair of compromised structural elements, lubrication of bearings and gearboxes.		

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CHRISTENSON, RICHARD		Professor, Department of Civil & Environmental Engineering, School of Engineering, UConn
Education:	University of Notre Dame, 1994, BS, Civil Engineering and 2002, PhD, Civil Engineering & Geological Sciences	
Professional Area:	Smart Structures, Real-Time Hybrid Simulation, Structural Control, Seismic Protective Systems, Magneto-Rheological Fluid Dampers, Bridge Monitoring	
Citation:	For internationally-recognized contributions in multi-hazard resilient infrastructure, particularly in structural dynamics and control, vibration-based structural health monitoring, and innovative testing methods as applied to earthquake engineering; traffic, wind and blast loading of transportation structures; and acoustic testing of marine structures.	
CRABTREE, ROBERT H.		Conkey P. Whitehead Professor of Chemistry, Yale University
Education:	New College, Oxford, 1970, BA,; Sussex University, 1973, PhD; National Center for Scientific Research (CNRS), Gif-s-Yvette, France, 1973-75, Postdoctoral Fellow	
Professional Area:	Inorganic Chemistry, Organic Chemistry, Green Chemistry	
Citation:	In recognition of contributions on the design and synthesis of molecules with unusual structures and properties, with an emphasis on alternative energy strategies, such as solar energy and hydrogen storage.	
GURVICH, MARK R.		Technical Fellow, United Technologies Research Center
Education:	Riga Technical University, Riga, Latvia, 1980, MS, Civil Engineering – 1983, PhD, Mechanical Engineering - 1992, Dr.Habil.Sc., Engineering	
Professional Area:	Internationally recognized expert in mechanics of composite materials and structures with personal contribution to areas of efficient computational modeling of composite structures, their reliability and probabilistic assessment, and experimental methods for mechanical evaluation and characterization.	
Citation:	For outstanding technical contributions to reliability of advanced aircraft composite structures under uncertain conditions, including development of probabilistic methods for their analysis, design and optimization, and experimentally validated approaches for damage tolerance-based assessment.	
HAMMES-SCHIFFER, SHARON		John Gamble Kirkwood Professor of Chemistry, Yale University
Education:	Princeton University, 1988, BA, Chemistry; Stanford University, 1993, PhD, Chemistry	
Professional Area:	Modeling and simulation of quantum mechanical processes in systems of relevance to both energy and biological sciences in three general areas: proton-coupled electron transfer reactions, enzymatic processes, and non-Born-Oppenheimer electronic structure methods	
Citation:	In recognition of research accomplishments in the development and application of theoretical and computational methods for describing chemical reactions in condensed phases and at interfaces.	
ILIES, HOREA T.		Department Head, Mechanical Engineering and Professor of Mechanical Engineering and of Computer Science, School of Engineering, UConn
Education:	Technical University of Cluj, Romania, 1993, BS/MS, Mechanical Engineering; Michigan State University, 1995, MS, Mechanics; University of Wisconsin, 2000, PhD, Mechanical Engineering	
Professional Area:	Geometric and physical modeling, CAD/CAM, computational design and synthesis of mechanical systems, virtual reality, and biomedical engineering.	
Citation:	For his formative contributions to the foundations of computational engineering design; and for his groundbreaking research in computational design and geometric modeling to enable systematic and efficient design, analysis and manufacturing of engineering artifacts. His work has received widespread commendations, including an NSF CAREER Award and multiple best paper awards.	
KANURI, SRIDHAR V.		Vice President, Global Head of Research and Engineering, Doosan Fuel Cells
Education:	Andhra University, Vizag, India, 1999, BS, Chemical Engineering; Florida State University, 2001, MS, Chemical Engineering, Carnegie Mellon University, Tepper School of Business, 2009, MBA	
Professional Area:	Sridhar Kanuri is the Global Head of Research and Engineering at Doosan Fuel Cells. He leads global teams based in Seoul, Hyderabad and South Windsor working on advancing electrochemical technologies including fuel cells, batteries, and other novel devices for grid applications. Sridhar is a member of the global Doosan R&D Alliance. He has made important contributions to electrochemical modeling, prognostics and health monitoring (PHM) and other traditional chemical engineering areas.	
Citation:	In recognition of extraordinary contributions to electrochemical science and technology including his seminal role in the discovery of basic mechanisms that control the performance and durability of fuel cells. These discoveries have had a profound impact on improving fuel cell efficiency, cost and reliability pushing the technology into mass commercialization.	

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KOLESKE, ANTHONY J.		Professor of Molecular Biophysics and Biochemistry and Neurobiology, Yale School of Medicine	
<u>Education:</u>	University of Wisconsin, 1988, BS, Biochemistry; MIT, 1993, PhD, Biology; MIT, 1994-1998 Post-doctoral, Molecular Biology/Neuroscience		
<u>Professional Area:</u>	Expertise in biochemistry, mouse genetic models, developmental neurobiology, electrophysiology, and behavior		
<u>Citation:</u>	A leader in cellular and molecular neuroscience, with a focus on Abl family kinase biochemistry and its impact on cellular behavior. His pioneering insights have illuminated how growth factor and adhesion receptor signaling controls cell shape and movement, including dendrite and dendritic spine development and stability, often perturbed in psychiatric disorders.		
KUPFER, GARY M.		Professor of Pediatrics, Yale School of Medicine and Chief, Hematology-Oncology, Yale Cancer Center	
<u>Education:</u>	University of Florida, 1983, BS, Interdisciplinary Studies; Johns Hopkins University, 1989, MD		
<u>Professional Area:</u>	Pediatric hematologist-oncologist, focusing on bone marrow failure, leukemia, and bleeding disorders. In addition, he oversees the Yale program in childhood cancer. He also runs a laboratory program focused on DNA repair, bone marrow failure, genomic instability, and cancer genetics and susceptibility.		
<u>Citation:</u>	In recognition of cancer research, using Fanconi anemia as a model system, a cancer susceptibility disease. In addition, he has cared for sick children with cancer and benign blood diseases, and has built and developed a comprehensive program that serves a large swath of Connecticut's children.		
LEI, YU		Professor, Chemical & Biomolecular Engineering, School of Engineering, UConn	
<u>Education:</u>	Sichuan University, China, 1993, BS, Chemical Engineering - 1996, MS, Chemical Engineering; University of California-Riverside, 2004, PhD, Chemical & Environmental Engineering		
<u>Professional Area:</u>	The primary area of Professor Lei's research is to develop novel, simple, cost-effective, ultrasensitive, and universal (bio)sensor and/or nanomaterial-based sensor platforms for the detection of biological and chemical species, which combine the principles of chemical engineering, nanotechnology and molecular biology for homeland security, environmental, energy and biomedical monitoring.		
<u>Citation:</u>	For outstanding and seminal contributions to the development of novel sensing technologies and devices for environmental, biomedical, energy and homeland security applications.		
MICHEL, LAURENT D.		Professor, Computer Science & Engineering, and Co-Director, Voting Technology Research Center, School of Engineering, UConn	
<u>Education:</u>	Université Facultaire Notre-Dame de la Paix, Namur, Belgium, 1993, BS, Computer Science – 1993, MS, Computer Science; Brown University, 1996, MS, Computer Science – 1999, PhD, Computer Science		
<u>Professional Area:</u>	Constraint-Based Local Search as a methodology and toolset to solve large and difficult Combinatorial problems; Constraint Programming and its Hybridization with Integer Programming; Security and integrity of electronic election systems and voting machines; Security of IoT devices and general software stacks; Demand Forecasting techniques for power distribution networks		
<u>Citation:</u>	In recognition of work in Constraint-Based Search and Optimization methods, and for contributions to cybersecurity and integrity of electronic election systems in Connecticut. He is a co-architect of several seminal and influential systems. His work in cybersecurity contributed greatly to the safety of Connecticut elections and resiliency of Internet-of-Things devices.		
NISHIYAMA, AKIKO		Professor, Physiology and Neurobiology, UConn	
<u>Education:</u>	Nippon Medical School, 1984, MD, Medicine; Niigata University, 1988, PhD (Doctor of Medical Sciences), Neuropathology and Molecular Neurobiology		
<u>Professional Area:</u>	Glial cell biology with a focus on the lineage and function of NG2 glial cells (oligodendrocyte precursor cells) in the central nervous system in development and lesion repair. Leadership role in restructuring the Advanced Microscopy Facility at UConn, obtaining NIH instrumentation grants to acquire confocal microscopes and recruiting facility scientists.		
<u>Citation:</u>	For pioneering contributions in brain development including the discovery that oligodendrocyte precursor cells (NG2 cells) comprise a normal cellular constituent in the mature brain and spinal cord and for establishing their lineage and establishing their function by creating transgenic mouse lines that are widely used by investigators around the world.		

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READ, NICHOLAS		Henry Ford II Professor of Physics and Professor of Applied Physics and Mathematics, Yale University
<u>Education:</u>	Sidney Sussex College, Cambridge University, Cambridge, England, 1980, BA, Mathematics and 1981, Part III of Mathematical Tripos: Certificate of Advanced Study in Mathematics; London University, London, England, 1986, PhD, Physics	
<u>Professional Area:</u>	Theoretical Condensed Matter Physics	
<u>Citation:</u>	Widely known for his work on the Quantum Hall Effect, a phenomenon that occurs in a two-dimensional system of electrons that is fabricated in a semiconductor device, placed in a strong magnetic field, and cooled almost to absolute zero. His work has been highly influential in the field of condensed matter physics, inspiring a number of discoveries relating to quantum computing.	
RENZ, JR., ROBERT N.		Vice President, Engineering, Kaman Precision Products
<u>Education:</u>	Metropolitan State University of Denver, 1991, BA, Chemistry (Minor in Mechanical Engineering Technology)	
<u>Professional Area:</u>	SCIENCE: Material Science, Chemistry, Environmental Science ENGINEERING DISCIPLINES: Mechanical Design, Computational Mechanics – FEA/CAD/CAE, Manufacturing, Energetic Materials and Projectiles, Classified defense products	
<u>Citation:</u>	An inspiring innovator in action, engineer by trade, and a mentor at heart, who brings a blend of fundamental knowledge and industry experience in energetic materials and explosives. His portfolio of design and utility patents span automobile air bags and airplane escape chutes for human safety; and now safe arm/disarm of military weapons for national security.	
SCHIFFER, PETER E.		Vice-Provost for Research, Office of the Provost; and Professor in Applied Physics, Yale University
<u>Education:</u>	Yale University, 1988, BS, Physics; Stanford University, 1993, PhD, Physics	
<u>Professional Area:</u>	Schiffer is a condensed matter physics/materials scientist with broad interests covering both granular materials and quantum and classical magnetism. He is also an important leader in science administration having been AVP for Research at Penn State, Vice-Chancellor at Illinois and having recently become the inaugural Vice-Provost for Research at Yale.	
<u>Citation:</u>	For outstanding contributions to both quantum and classical physics and our understanding of magnetism in liquid helium-3, manganites, geometrically frustrated 'spin-ice' compounds, invention of novel artificial 'spin-ice,' as well as elucidating the physics of drag in granular materials and making the first modern study of capillary forces in wet sand.	
SETO, KAREN C.		Senior Associate Dean of Research, Frederick C. Hixon Professor of Geography and Urbanization Science, and Director of Doctoral Studies, School of Forestry and Environmental Studies, Yale University
<u>Education:</u>	University of California, Santa Barbara, 1991, BA, Political Science; Boston University, 1995, MA, International Relations & Resource and Environmental Management, and 2000, PhD, Geography	
<u>Professional Area:</u>	Human transformation of land and the links between urbanization, global change, and sustainability	
<u>Citation:</u>	In recognition of research notable for its systematic use of big data and a scientific lens to study urbanization as a process and to understand aggregate global impacts of urbanization.	
SRIVASTAVA, RANJAN		Professor and Department Head, Chemical & Biomolecular Engineering, School of Engineering, UConn
<u>Education:</u>	Washington University in St. Louis, 1993, BS, Chemical Engineering; University of Maryland, College Park, 1995, MS, Chemical Engineering and 1999, PhD Chemical Engineering	
<u>Professional Area:</u>	Computational Biology, Systems Biology, Metabolic Engineering, Evolutionary Algorithms	
<u>Citation:</u>	For pioneering investigations of computational methods, particularly stochastic models and evolutionary algorithms, in systems biology and metabolic engineering leading to an understanding of bacterial stress response regulation and the role of stochasticity in viral dynamics; development of automated curation algorithms for biological networks, and design of highly efficient antisense molecules.	

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VEDULA, VENKAT		Senior Director, Materials Engineering, UTC Aerospace Systems
<u>Education:</u>	Institute of Technology, Banaras Hindu University, India, 1990, B.Tech, Metallurgical Engineering; State University of New York at Buffalo, 1993, MS, Mechanical & Aerospace Engineering; Pennsylvania State University, 1997, PhD, Materials Science & Engineering; Rensselaer Polytechnic Institute, 2005, MS, Management	
<u>Professional Area:</u>	Advanced Materials & Advanced Manufacturing strategy development; Additive manufacturing technologies for aerospace applications; Industry leader in environmental sustainability with a focus on elimination of hazardous chemicals and materials such as hexavalent Chromium and Cadmium from products.	
<u>Citation:</u>	For seminal contributions in the development of advanced materials technologies and supporting materials and processes for aerospace programs; for pioneering research in additive manufacturing of aerospace alloys, custom alloy designs, fuel cell concepts and environmental sustainability solutions.	
VERMUND, STEN H.		Dean, and Anna M.R. Lauder Professor of Public Health, Yale School of Public Health, and Professor of Pediatrics, Yale School of Medicine
<u>Education:</u>	Stanford University, 1974, BA, Human Biology; Albert Einstein College of Medicine, Yeshiva University, 1977, MD; Royal Institute of Public health and Hygiene, UK, 1981, DPH (Diploma in Public Health); Columbia University, 1987, M. Phil, Epidemiology and 1990, PhD, Epidemiology	
<u>Professional Area:</u>	Pediatrician and infectious disease epidemiologist with focus on health care access, adolescent sexual and reproductive health and rights, and prevention of HIV transmission among general and key populations, including mother-to-child	
<u>Citation:</u>	In recognition of international leadership on global health and health access issues including his recent research on HIV prevention in intravenous drug users in Pakistan, cervical cancer prevention at Tanzanian HIV clinics, HIV prevention in China, and maternal-fetal HIV transmission in Nigeria.	
WANG, BING		Professor, Computer Science & Engineering, School of Engineering, UConn
<u>Education:</u>	Nanjing University of Science & Technology, Nanjing, China, 1994, BS; The Chinese Academy of Sciences, Beijing, China, 1997, M. Engr., Computer Engineering; University of Massachusetts, 2000, MS, Computer Science – 2004, MS, Applied Mathematics – 2005, PhD, Computer Science	
<u>Professional Area:</u>	Computer Networking, Distributed Systems, Mobile Systems, Machine learning	
<u>Citation:</u>	For outstanding technical contributions to computer networking, including developing novel techniques for multimedia streaming, wireless network management, and frameworks for automatic and pervasive depression screening using smartphones.	