Dr. Brian Davis is the Chair of the Biomedical Engineering Department. Before coming to The University of Akron, he was the Vice President of the Medical Device Development Center. He holds both a bachelor’s degree in mechanical engineering and a master’s degree in medicine (biomedical engineering) from the University of Cape Town (South Africa), and a Ph.D. from Penn State University. He had a staff-level appointment at the Cleveland Clinic from 1992 to 2010. During that time he was the first Cleveland Clinic investigator to receive a peer-reviewed grant from NASA headquarters on the topic of foot biomechanics in response to impact loading (1996-1998), the first investigator to obtain funding from the Juvenile Diabetes Research Foundation, and the first to obtain a four-year grant from the Howard Hughes Medical Institute. He subsequently received funding to develop and test an exercise countermeasure device for astronaut use and was part of a team that developed biomechanical sensor instrumentation that is currently on the International Space Station. In terms of medical devices, Dr. Davis has led a number of initiatives focused on rehabilitation technology and instrumentation for assessing a patient’s risk for diabetic foot ulceration. He is currently the Principal Investigator on a State-funded project aimed at commercializing sensors for diagnosing connective tissue disorders. He is also leading an educational program named “BEST Medicine” that encourages middle and high school students to develop interests in engineering, science and technology, particularly as these relate to designing novel medical devices.

Dr. Rouzbeh Amini completed a Ph.D. in biomedical engineering at the University of Minnesota in the field of ocular biomechanics and biotransport. He continued his research work as a postdoctoral fellow in the University of Pittsburgh’s Bioengineering Department where he studied mitral valve biomechanics. Dr. Amini joined the Department of Biomedical Engineering at the University of Akron in 2013. His overall research aim is
to improve people’s lives and protect their health by advancing the field of experimental and computational soft tissue biomechanics using a multi-scale approach. Dr. Amini is particularly interested in ocular, cardiovascular, and vaginal tissue biomechanics. More specifically he aims to better understand the pathophysiology of glaucoma, cardiac valve repair failure, and pelvic organ prolapse. Although, such organs noticeably differ in terms of function, in all cases, abnormal mechanical milieu may lead to permanent and often detrimental outcomes.

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Dr. Yang Liu received his Ph.D. in biomedical engineering from Washington University in St. Louis in 2013. During 2009-2013 he conducted translational bioinstrumentation research at the Radiology Department of Washington University School of Medicine. His research program focuses on optical instrumentation, surgical technologies and medical devices. The overall goal of his program is to bring novel medical technologies from bench top to bedside of patients. He develops interdisciplinary approaches interfacing between optics, electrical engineering, systems engineering, materials science, molecular imaging and medicine to solve challenging medical problems.

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Dr. Reddy received his Ph.D. in biomedical engineering from Texas A&M University in 1974. Dr. Reddy served as a research associate at Texas A&M (74-75) and Baylor College of Medicine (75-76), as a Postdoctoral Fellow in Cardiovascular Research Institute, University of California School of Medicine in San Francisco (77-78), and as a Senior Research Scientist at Helen Hayes Hospital in New York (78-81), before joining the University of Akron in 1981 as an associate professor of biomedical engineering. He has been a professor Biomedical Engineering since 1989. Dr. Reddy is a Fellow of American Institute for Medical and Biological Engineering, and also of the Biomedical Engineering Society. Dr. Reddy has established the Human Interface Technology Laboratory at the University of Akron. His current interests are in Noninvasive Measurements, Human Performance Measurements, Computer Aided Diagnosis, Medical Devices; Modeling and Simulation, Neural Networks and Fuzzy Logic Applications in Classification and Control. Dr. Reddy has published over eighty papers in journals and books, and has presented over 150 papers at national and international conferences.
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Dr. Marnie Saunders received her B.S. mechanical engineering (1991), MS Eng (1994) and Ph.D. Eng (1998) degrees from The University of Akron with a concentration in mechanics and biomechanics. After completing her Ph.D., she spent two years in a Postdoctoral Fellowship at the Pennsylvania State University College of Medicine in the Department of Orthopaedics and Rehabilitation. In addition to conducting orthopaedic biomechanics research, she focused her research efforts in bone mechanotransduction or research aimed at identifying, understanding and manipulating the mechanisms and pathways by which bone cells sense and respond to mechanical loading. Applications of this work include implant design, tissue engineering and bioreactor development. Her continued interests in this field have resulted in her current research aimed at developing biomimetic models of bone cell stimulation including organ culture systems and microsystems. In addition, her outreach interests include engaging K-12 students in math and science through hands-on mechanical testing projects. She has received funding for her research from agencies such as the Whitaker Foundation, National Institutes of Health and National Science Foundation and is currently an NSF Career Award recipient. She has published approximately 40 refereed journal articles and book chapters and approximately 80 refereed conference papers/abstracts.

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Dr. Hossein Tavana received his PhD in Mechanical Engineering from University of Toronto where he studied thermodynamics of polymer film-fluid systems interfaces. He then joined the Biomedical Engineering department of University of Michigan as a postdoctoral fellow and developed novel micro-biotechnologies to study function of cells under normal and pathologic conditions. Examples include a microfluidic model of lung airways to study pathologic flow-mediated airway epithelium injury and a novel cell printing technique to engineer 3D tissue constructs. Dr. Tavana joined the Biomedical Engineering department of the University of Akron in 2010. His interdisciplinary research interests include (i) developing an in vitro model to study direct drug delivery in the lung, (ii) stem cells differentiation for tissue engineering applications, (iii) engineering platforms for high-throughput analysis of cancer cell migration and testing the potency of novel natural and synthetic drugs to inhibit migration, and (iv) developing microfluid devices for cellular studies.
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Mary Verstraete is an Associate Professor of Biomedical Engineering and the Coordinator of the Undergraduate Program in Biomedical Engineering at The University of Akron. Her research interests include human and canine gait analysis, including a study on the effects of backpack weight on the spine in school age children. She is also interested in the analysis of human movement during sports, exercise and rehabilitation. Dr. Verstraete received her BS, MS and Ph.D. in engineering mechanics, with a focus in biomechanics, from Michigan State University and started working as an Assistant Professor at The University of Akron in 1988. During her 14 years at the university, she has received tenure and promotion to Associate Professor (only the second woman to do so in the College of Engineering), served as the first Director of the Women in Engineering Program, and served four years as Department Chair of Biomedical Engineering. During her time as Department Chair, she spearheaded the efforts to develop an undergraduate program in Biomedical Engineering, which was approved by the State of Ohio in 1998 and first received ABET accreditation in 2003. Dr. Verstraete has also been awarded numerous teaching honors, both within The University of Akron (university and College wide) and nationally from the Society of Women Engineers (Distinguished Engineering Educator Award) and the American Society of Engineering Education Biomedical Engineering Division (Theo C. Pilkington Outstanding Educator Award).

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Dr. Rebecca Kuntz Willits received her MS (1996, JHU) and Ph.D. (1999, Cornell) degrees in chemical engineering studying the interactions between migrating cells and biomaterials. After completing her PhD, she joined the Department of Biomedical Engineering faculty at Saint Louis University, where her research interests included orthopedic, cardiovascular, and neural tissue engineering. Dr. Willits joined The University of Akron in 2010 as the Margaret F. Donovan Endowed Chair for Women in Engineering. The primary goal in Dr. Willits’ lab is to design three dimensional materials to control cell function. The laboratory has been specifically interested in using poly(ethylene glycol) based materials for cardiac and neural tissue engineering. Expertise in Materials Research: Characterization of cell response in 3D materials; Mechanical properties of hydrogels. Past Funding in Materials Research: National Science Foundation Major Research Instrumentation; NSF REU, NSF CBET
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Before joining The University of Akron as an Assistant Professor in Biomedical Engineering, Dr. Bing Yu was a Research Assistant Professor at Duke University. During his tenure at Duke, Dr. Yu developed a number of noninvasive or minimally invasive optical techniques for biomedical applications. Between 2006 and 2012, Dr. Yu also co-founded and was a Principal Engineer of Zenalux Biomedical, Inc. (formerly Endls Optics, Inc.), a biomedical device company in North Carolina. Dr. Yu received his Ph.D. in electrical engineering from Virginia Tech in 2005. His Ph.D. work focused on fiber optic sensors based on white-light interferometry (WLI) for harsh environments. His study has led to the invention of a thermally tunable optical filter (TOF) and the new method of using TOF as a cost-effective demodulation scheme for WLI. His work on diaphragm-based Fabry-Perot interferometric (DB-FPI) sensors for partial discharge detection in high voltage power transformers has attracted a significant amount of national and international attention in the field. In the last five years Dr. Yu’s research in Biophotonics has attracted over $7 million dollar of NIH funding and resulted in over 15 peer-reviewed publications and 5 US/international patents or patent applications. He was the recipient of the 2009 Best Poster Award at the ECI Conference on the Advances in Optics for Biotechnology, Medicine and Surgery XI and 2008 Duke University Postdoctoral Award for Research Excellence. Dr. Yu’s current research interests include optical spectroscopy and imaging for cancer diagnostics and therapeutics, miniature and cost-effective optical devices for global health, image-guide optical biopsy, tumor hypoxia, bio/nano-photonics sensors, and biophotonics instrumentation.

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Dr. Yang Yun received his B.S. degree in mechanical engineering from Christian Brothers University and his M.S. and Ph.D. degrees in the area of biomedical engineering from the University of Memphis. Prior to coming to the University of Akron, he was a postdoctoral fellow at State University of New York at Stony Brook and joined the faculty of the Department of Biomedical Engineering at the University of Akron in the fall 2004. Dr. Yun has worked to establish the Biomaterials and Tissue Engineering curriculum for the Department of Biomedical Engineering for both graduate and undergraduate academic programs. In addition, he has developed courses that include Advanced Biomaterials, Biomaterials and Tissue Engineering Methods, Advances in Gene and Drug Therapy Delivery Systems, and Mechanics of Biological Tissues. Dr. Yun’s primary area of research can be classified as Biomaterials Science and Engineering. He has synthesized novel materials designed to interact strategically and beneficially with the biological environment. These biomaterials have been
successfully formulated into drug and gene delivery systems, tissue engineering scaffolds, and nanoscale devices for biomedical applications. An example of Dr. Yun’s research is the invention of a synthetic nanovirus (patent pending) where the viral behaviors such as receptor recognition, cellular entry, endosomal release, enhanced DNA translation, and control of protein production have been artificially duplicated and incorporated into a single nano-sized package. Although patterned to function as a virus, this invention does not have any of its harmful effect. The biomedical applications for the synthetic nanovirus and other research efforts are the therapeutic treatments for cancer, cardiovascular diseases, asthma, wound healing, biofilm, and gene therapy. Sources of extramural funding include NIH, NSF, and industry.

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Dr. Ge Zhang earned her Ph.D. degree in biomedical engineering with a concentration in stem cell therapy and tissue engineering from the University of Minnesota in 2006. She also earned her M.D. in China before she came to the United States. Prior to joining the faculty of The University of Akron she received her postdoctoral training at University of Texas at Austin in the area of cardiovascular tissue engineering. The overall goal of Dr. Zhang’s research is using engineering principles and techniques to understand how microenvironmental cues direct vascular and neuronal differentiation from stem cells, to elucidate the underlying mechanisms of the interaction between the vascular and nervous system and to develop tissue engineering strategies to explore their application in treating various cardiovascular diseases and neurological disorders.
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Dr. Cheung received his B.S., MS, and Ph.D. degrees from Case Western Reserve University. Research interests include colloid and surface science, polymerization in microemulsions, sonochemical processes, supercritical fluid processing, light scattering, engineering education innovations

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Dr. Castaneda-Lopez received his Ph.D. in materials science and engineering from Penn State. He received his MS in metallurgy and B.S. in chemical engineering from The National University of Mexico (UNAM). More than 10 years of experience in Industry and Research Laboratories
Dr. Castaneda’s activities concentrate on corrosion resistant alloys (stainless steels, nickel, titanium, zirconium, aluminum), selection and assessment of coatings, characterization of bioelectrochemical processes, modeling and design multifunctional materials for storage and energy conversion, modeling integrity, reliability and environment degradation of materials, electrochemical design and characterization of corrosion inhibitors and validation of mechanisms for mechanical assisted corrosion.
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Professor Chase holds B.S. and Ph.D. degrees in chemical engineering from the University of Akron. He joined the faculty in 1989 after serving five years in the U.S. Army Corps of Engineers. Professor Chase teaches graduate and undergraduate core courses in chemical engineering such as chemical reaction engineering, process dynamics, fluid and thermal operations, process dynamics, and transport phenomena. He teaches specialized courses in multiphase transport phenomena and in solids processing. Professor Chase’s research interests include fluid-particle separations, filtration, filter media design, chemically reactive filter media, polymeric and ceramic nanofibers, and modeling of microfiber-nanofiber composite systems. His current research includes design and testing of liquid-gas and liquid-liquid coalescing filter media and catalytic filter media for small engines. His work has been sponsored by the Coalescence Filtration Nanomaterials Consortium (Ahlstrom, Parker Hannifin, Donaldson, Cummins Filtration, and MemPro Ceramics), National Science Foundation, Department of Energy, and the US Army Environmental Center, as well as by a number of industrial companies on individual projects. Professor Chase is a member of the American Institute of Chemical Engineers, American Society of Engineering Educators, and Sigma Xi. Professor Chase is a Fellow of the American Filtration and Separations Society.

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Dr. Gang Cheng received his Ph.D. degree from the Department of Chemical Engineering at the University of Washington, Seattle, WA, in 2009. His research interests focus on elucidating the interaction mechanisms between biomaterials and microorganisms at the molecular level, designing novel materials with both non-fouling and antimicrobial properties using fundamental principles developed to resist long-term biofilm formation for both biomedical and industrial applications, and developing better drug delivery platforms for targeted protein/siRNA/DNA delivery.
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Before joining The University of Akron, Dr. Cong was Senior Engineer in the Materials and Corrosion Technology Center of Det Norske Veritas (DNV). He received his Ph.D. and M.S. in materials science and engineering from the University of Virginia and his B.S. in materials science and engineering from Tsinghua University, Beijing, China. Dr. Cong’s research interests include corrosion and performance of materials in harsh environments, which is critical in advancing the safety, durability, and performance of current technology for storing radioactive nuclear waste. In addition, he investigates and develops new methods for solving challenging corrosion and inhibition issues in the oil and gas industry. He has also developed and contributes to the development of innovative wireless sensor technologies for monitoring various corrosion phenomena in pharmaceuticals, energy generation, nuclear waste storage, and bio-fuel systems.

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Dr. Evans is an Associate Professor in the Department of Chemical and Biomolecular Engineering. Dr. Evans received his Ph.D. from Case Western Reserve University in 1998 in chemical engineering. Since joining The University of Akron he has worked on several different material systems most of which fall into the category of ceramics, ceramic coatings and ceramic composites. Over the last four years the work in Dr. Edward Evans’ lab has been focused on making and studying ceramic nanofibers for use in thermophotovoltaic devices with funding from the National Science Foundation under a NIRT grant. In this project we synthesize ceramic nanofibers, form them into composite structures, and then characterize their microstructure, macrostructure and emission properties in the infrared region. The results of this work and the work in many of the other projects Dr. Evans works on are a result of collaboration with faculty and students from across campus.
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Dr. J. Richard Elliott is a Professor of Chemical and Biomolecular Engineering where he has worked since 1986. He received his MS in chemical engineering from Va. Tech in 1982 and the Ph.D. from Penn State in 1985. He leads the Supercritical Fluid Consortium in the Dept and specializes in property estimation using molecular dynamics simulation (www.speadmd.org). Recent research has focused on developing transferable force fields for predicting thermodynamic properties, interfacial properties, transport properties, and phase behavior; applications to sustainable plasticizers in PLA and PVC; and experimental studies of supercritical biomass pretreatment. His research has been sponsored by NSF, USDA, OAI, OBR, BP, Rexorce, PolyOne, and Chemstations. He is the co-author of over 60 journal publications and the Prentice-Hall textbook on Introductory Chemical Engineering Thermodynamics. He is an active member of AIChE, serving on the Area 1a programming committee from 2007-2012, including programming chair at the Spring 2010 and Fall 2012 meetings. He has also been active in the Midwest Thermodynamics and Statistical Mechanics Symposium, hosting the conference twice at The University of Akron.

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Dr. Gupta received his Ph.D. in materials engineering from Monsash University, Australia and his B.Tech in metallurgical and materials engineering from the Indian Institute of Technology, Kanpur, India. His research interests include electrochemistry, corrosion science and engineering, passivity, early stages of pitting corrosion; infrastructure durability, cathodic protecting, high temperature corrosion; alloy design, material selection, manufacturing technologies, general materials science.

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Dr. Lu-Kwang Ju obtained his Ph.D. and MS from the University of Buffalo (SUNY) and B.S. from National Taiwan University, all in chemical engineering. Dr. Ju joined UA in 1990. He a Fellow of American Institute for Medical and Biological Engineering. His research involves biological processes and systems, mostly with living
microorganisms. His group holds several patents on the production and modification of gas vesicles in blue-green algae. The gas vesicles are enclosed by thin protein wall and are potentially suitable as ultrasound contrast agent and for delivery of gaseous substances (including those in medical applications such as NO). His group also works on microbial biofilm formation and its effect on corrosion. Most of his current projects are related to renewable bioenergy. His group develops more effective processes to produce fungal enzymes that convert plant biomass to sugars, which can then be fermented to produce bioethanol as fuel. They also develop unique processes for growing algae that bear high contents of oil. The algae oil is a good source for making biodiesel. In addition, they develop processes to convert the sugars and glycerol (a major byproduct from biodiesel production) to other value-added products such as biosurfactants and sugar derivatives, to be used in “green” formulations of detergents, food and cosmetics. Producing renewable fuel and value-added products from the sugars and oil generated using these processes will help to address the global warming and other environmental issues while avoiding the consumption of food sources for fuel production.

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Dr. Nic Leipzig is the Iredell Chair Assistant Professor in Chemical and Biomolecular Engineering at The University of Akron. He received his Ph.D. in bioengineering from Rice University (Houston, Texas) in 2006 and his B.Eng. in chemical engineering from McGill University (Montreal, Quebec) in 2001. During his Ph.D. work Dr. Leipzig studied the biomechanics of single chondrocytes (cartilage cells), explored how growth factors change both the cytoskeleton and the material properties of chondrocytes, developed new methods for measuring gene expression in single cells and utilized these techniques to be the first to successfully demonstrate gene expression changes by mechanotransduction in single chondrocytes. During his postdoctoral work at the University of Toronto from 2006-2009, he developed hydrogel-biomaterial systems to enable precise control of the cell microenvironment in order to guide the differentiation of adult stem cells. He has studied 2D and 3D responses, revealed that substrate stiffness can influence neural stem cell proliferation and differentiation and demonstrated the advantages of covalently attaching growth factors for precisely guiding stem cell differentiation. Nic’s current research interests center on tissue engineering of the central nervous system utilizing engineered biomaterials, mechanical stimulation and new stem cell sources. Specifically he is interested in: (1) spinal cord functional tissue engineering utilizing tensile/stretch stimulation, (2) new tools for studying single cell biomechanics and mechanotransduction and (3) tissue engineering utilizing 3D engineered microenvironments.

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Prior to joining The University of Akron Scott Lillard was a Technical Staff Member for 16 yrs. in the Materials Science & Technology Division, of the Los Alamos National Laboratory. He received his Ph.D. in materials science and engineering from the G.W. Whiting School of Engineering at the Johns Hopkins University in 1992. He completed his Post-Doctoral work at the University of Virginia, Center for Electrochemical Sciences and Engineering in 1995. He serves as US Editor the Corrosion Engineering Science and Technology, is the author of over 70 technical publications and is a Fellow of NACE International. Research and engineering in the area of environmental degradation with emphasis on localized corrosion, passivity and dielectric properties of oxide films, hydrogen reaction kinetics at the metal/solution interface, hydrogen transport / trapping / phase transformation in metals, environment assisted cracking of metals, the influence of radiation and water radiolysis in reactor corrosion, beryllium and its alloys and high temperature oxidation in liquid metal environments.

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Dr. Lingyun Liu received her B.S. and MS degree in biomedical engineering from Southeast University, China. In 2007 she received her Ph.D. degree in bioengineering from the University of Washington. She then joined the Department of Chemical and Biomolecular Engineering at The University of Akron as an assistant professor.

Dr. Lingyun Liu’s research interests include biointerfaces (cell-protein-material interactions), biomaterials/tissue engineering, wound healing, biosensors, and anti-fouling materials. Her PhD work focused on understanding and controlling biointerfacial properties at the molecular level to control protein adsorption, orientation, conformation, and distribution on surfaces to modulate cell behavior. Current research interests in her lab include: (1) Develop new non-fouling materials for biomedical applications; (2) Electrospun multi-functional polymers for wound dressing and skin tissue engineering to promote wound healing; (3) Develop surface-based biosensing strategies to achieve both high sensitivity and high specificity for biomedical applications, and (4) Develop smart polymers for oil/water separation. She has been the PI or co-PI of grants funded by NSF, Ohio Third Frontier, Clinical Tissue Engineering Center, Firestone, and University of Akron. Experimental expertises in her group include polymer synthesis, surface modification and characterization, surface plasmon resonance (SPR) sensor, atomic force microscope (AFM), electrospinning, various biochemistry techniques, and tissue culture.

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Dr. Chelsea Monty received her Ph.D. degree from the Department of Chemical and Biomolecular Engineering, University of Illinois Urbana-Champaign, Urbana, IL, in 2009. Her research interests are to develop micro-scale sensors using biological mimics for the detection of toxic compounds, portable devices to screen for toxins for environmental, medical, pharmaceutical, and military applications. Her previous work has concentrated on a variety of biological and chemical devices in order to detect toxic compounds; however, the short lifetime of biological methods and the lack of selectivity of chemical methods make them poor candidates for portable detection. Biological mimics, on the other hand, can be used in place of unstable biomolecules to provide longer stability without sacrificing selectivity. One research area will focus on the use of biological mimics in the detection of several toxicological modes (e.g. oxidative phosphorylation uncoupling, inhibition of metabolic enzymes, respiratory inhibition, acetylcholinesterase inhibition, and oxidative stress). A second, related research area will use bio-mimicry for non-biological inhibition based sensors in order to chemically amplify the response from various toxic compounds.

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Dr. Zhang Newby obtained her B.S. degree in 1993 from Drexel University, her M.S. (1995) and Ph.D. (1999) degrees, both from Lehigh University. All her degrees are in chemical engineering. Before joining The University of Akron, Dr. Zhang Newby worked as a post-doctoral researcher in the Laboratory of Research on the Structure of Matter (LRSM) at the University of Pennsylvania for about two years. She has been a PI or co-PI on over $1 million of grants/contracts funded by National Science Foundation (NSF), Ohio Sea Grant College Programs, Department of Defense (DOD), the Austen BioInnovation Institute in Akron (ABIA), and the Ohio Board of Regents (OBR). She has 30 peer-reviewed ISI journal publications and one refereed book chapter, amongst them she is the lead and/or corresponding author for 28 journal papers and the book chapter. She also has over 20 conference proceedings, and has advised/is advising 15 graduate students, over 30 undergraduate students, and nine high-school students.

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Dr. Joe H. Payer is the Research Program Director of the UA Corrosion and Reliability Engineering program and an internationally recognized expert in corrosion and materials performance. Dr. Payer directed the U.S. Department of Energy, multi-university, Corrosion and Materials Performance Cooperative at Case Western Reserve University (Case). The 5-year, nearly $10M Cooperative was for improved performance assessment for the long-term disposal of spent nuclear fuel for time periods of 10,000 years. He is former director of the Yeager Center for
Electrochemical Sciences at Case. Dr. Payer is a Fellow of ASM International, a Fellow and past president of NACE International, and received the ASTM Sam Tour Award for Distinguished Contributions to Research, Development and Evaluation of Corrosion Testing Methods. Dr. Payer's expertise includes materials selection, failure analysis, development and verification of corrosion control methods, advances to test methods and monitoring systems and determination of degradation mechanisms. His work has focused on localized corrosion of highly corrosion resistant materials; gas and oil pipeline integrity; the effects of manufacturing processes on performance and reliability of materials in service; coatings and surface treatments; hydrogen/materials interactions; coating systems for autos, appliances and construction; electronics and communication; and fuel cells.

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Before joining The University of Akron as an Assistant Professor in the Department of Chemical and Biomolecular Engineering, Dr. Zhenmeng Peng was a postdoctoral scholar with Dr. Alexis T. Bell at the University of California at Berkeley. He worked there from 2010 to 2012 and studied platinum bimetallic catalysts for light alkane dehydrogenation. Dr. Peng pursued his doctoral studies in electrocatalysis at the University of Rochester during 2005 and 2010, where he worked with Dr. Hong Yang and received his Ph.D. in chemical engineering. He has also received one B.S. and one M.S. in materials science from the University of Science and Technology of China in 2002 and 2005. Dr. Peng’s research interests include understanding of catalytic reactions at a molecular level, design of highly active, cost-effective and stable electrocatalysts to enable the commercialization of fuel cells, and development of advanced materials useful as heterogeneous catalysts for a wide range of energy-related reactions. He has so far co-authored more than 30 peer-reviewed journal papers, one review article, and one book chapter.

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Dr. Puskas started her academic career in 1996. Before that she was involved in polymer research and development in the microelectronic, paint and rubber industries. Her present interests include green polymer chemistry, biomimetic processes and biomaterials, living/controlled polymerizations, polymerization mechanisms and kinetics, thermoplastic elastomers and polymer structure/property relationships, and probing the polymer-bio interface. She was also member of the IUPAC Working Party IV.2.1 "Structure-property relationships of commercial polymers". Puskas has been published in more than 350 publications, including technical reports, is an inventor or co-inventor of
30 U.S. patents and applications, and has been Chair or organizer of a number of international conferences. As a coinventor of the polymer used on the Taxus® coronary stent, Puskas helped the University of Akron generate more than $5 million in license fees. With her business partners they founded Arbomatrix LLC and Akron-Austin Monomers-Polymers LLC for supplying polymers for medical devices. Dr. Puskas received a PhD in plastics and rubber technology in 1985, and an M. E. Sc in organic and biochemical engineering in 1977, from the Technical University of Budapest, Hungary. Her advisors were Professors Ferenc Tüdös and Tibor Kelen of Hungary, and Professor Joseph P. Kennedy at the University of Akron, Ohio, USA, in the framework of collaboration between the National Science Foundation of the USA and the Hungarian Academy of Sciences. Dr. Puskas is the recipient of several awards, including the 1999 PEO (Professional Engineers of Ontario, Canada) Medal in Research&Development, a 2000 Premier's Research Excellence Award, the 2004 Mercator Professorship Award from the DFG (Deutschen Forschungsgemeinschaft, German Research Foundation), the LANXESS (previously Bayer) Industrial Chair 1998-2008, the 2009 “Chemistry of Thermoplastic Elastomers” Award of the Rubber Division of the American Chemical Society, the 2011 Woman of Achievement Award. She was elected Fellow of the American Institute of Medical and Biological Engineering AIMBE in 2010. She was awarded the Austin Chemical Chair at the University of Akron in 2011. In 2012 she was one of the five winners of the GE Healthymagination Breast Cancer Challenge Award.

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Dr. Donald P. Visco, Jr. received his B.S. (1992) and Ph. D. (1999) degrees in chemical engineering from the University at Buffalo, State University of New York, with time between spent in the US Navy. Dr. Visco spent nearly twelve years as a faculty member in chemical engineering at Tennessee Technological University where his research interests included thermodynamics modeling and experimentation, computer-aided molecular design, impulse detection in granular media and engineering education. He joined The University of Akron in the Spring of 2011 as the Associate Dean for Undergraduate Studies as well as a Professor in the Department of Chemical and Biomolecular Engineering. His current research interests are focused on computer aided molecular design for both biological and non-biological applications, data mining approaches and engineering education.

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Dr. Zheng research is highly interdisciplinary, but mainly focuses on the sequence-structure-function relationship of biomolecules (proteins,
peptides, and DNA/RNA) upon interacting with biological membranes, biomaterials, and other inorganic surfaces. We uniquely integrate theoretical models, molecular simulations, and biophysical experiments to conduct fundamental and applied research at the interface of computational structural biology, biophysics, biomaterials, and nanotechnology, with the goals of better understanding of biophysicochemical interactions at the biological interfaces and rationally engineering biomolecules for practical applications in biomaterials and medicine. Currently, we are particularly interested in: (1) molecular design of smart, multifunctional biomaterials; (2) molecular engineering of peptide and peptide mimetics; (3) protein- and peptide-directed syntheses of inorganic materials; (4) virus capsid-templated energy-storage materials; (5) In silico design of novel self-assembling peptides for nanomaterials; (5) structure and toxicity of bioactive peptides.

Dr. Zheng received the Ph.D in chemical engineering at the University of Washington in 2005 under the supervision of Prof. Shaoyi Jiang. After graduation, he was a Research Scientist at the laboratory directed by Prof. Ruth Nussinov at the National Cancer Institute between 2005-2007. He joined the Department of Chemical and Biomolecular Engineering at the University of Akron on October 1st, 2007 as a tenured-track Assistant Professor. In 2012, he was early tenured and promoted to Associate Professor. Dr. Zheng has received a number of national-wise awards, including NSF CAREER Award (2010), 3M Non-Tenured Faculty Award (2008); Anton Award from National Resource for Biomedical Supercomputing (2010). He has published 54 papers, with over 1500 citation and h-index of 21.

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During his Ph.D. work, Dr. Zhu's research covers the fundamental study of multifunctional polymer and carbon nanocomposites and explores their applications in energy storage and environmental remediation. Dr. Zhu's current research interests include (1) process design for carbon-shelled nanocomposite synthesis coupled with polymer waste recycling into liquid fuels, (2) structure design and property manipulation of novel adsorbents by using bio-templates for heavy metals removal from polluted water, (3) magnetic field responding electrocatalyst and photocatalyst development for highly-efficient photoelectrochemical CO₂ conversion to liquid fuels, (4) electrochemical sensor development for detecting explosive chemicals and toxic heavy metals at extremely low concentration.

Dr. Zhu has served as session chair and co-chair for the TMS conference and AIChE annual meetings. He has coauthored more than 50 peer-reviewed journal articles with over 800 citations, two book chapters and two provisional USA patents.

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Dr. Abbas is an Associate Professor of Civil Engineering at the University of Akron. His specialties include pavement materials, design, and performance modeling. His primary areas of research are on micromechanical modeling of geomaterials, dynamic response of asphaltic materials such as asphalt mastics and asphalt concretes, and rheological behavior of asphalt binders with emphasis on the role of binder modification on pavement performance. Prior to joining the University of Akron, he worked at the Turner-Fairbank Highway Research Center (TFHRC) in McLean, VA, as a Highway Research Fellow from January 2003 until July 2004, and as a Highway Research Engineer from October 2004 until August 2005. The TFHRC is a highway research facility managed and operated by the Federal Highway Administration (FHWA), where new transportation products and materials are frequently being evaluated. Dr. Abbas is the recipient of several prestigious awards including the Eisenhower Graduate Research Fellowship Award in Transportation Engineering (one out of 15 nationally) for the years 2002-2004 and the American Society of Civil Engineering (ASCE) Excellence in Civil Engineering Education (ExCEEd) Award for the year 2009. Dr. Abbas has been a PI or Co-PI on more than $700,000 of external research grants from the FHWA and the Ohio Department of Transportation (ODOT). The work of Dr. Abbas has been presented in several conferences and accepted for publication in several refereed journals including the Journal of the Transportation Research Board (TRB), Journal of the Association of Asphalt Paving Technologists (AAPT), International Journal of Pavement Engineering (IJPE), the American Society of Civil Engineers (ASCE) Journal of Materials, and the American Standards for Testing and Materials (ASTM) Journal of Testing and Evaluation (JTE).

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at the Timken Company where he was responsible for global research and development activities in bearing tribology, lubrication, surface engineering, and non-ferrous materials. Dr. Doll was elected as an ASM Fellow in 2009 for his contributions to the field of Surface Engineering. He currently serves as chair of the STLE/ASME Wind Energy Tribology Committee and is an assistant editor for Tribology Transactions. Over his career, Dr. Doll has published over 150 articles and book chapters, edited four proceedings, and received more than 25 US Patents.

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Robert Y. Liang received his Ph.D. at the University of California, Berkeley in 1985. He joined The University of Akron in 1985, receiving his tenure in 1990. Liang served as chair of the Department of Civil Engineering from 1995 to 2000. He is the founding director of the joint University of Akron/Case Western Reserve University (UA/CWRU) Center for Infrastructure Materials and Rehabilitation to conduct multi-disciplinary research on sustainable construction materials and infrastructure rehabilitation technologies.

Liang’s research has encompassed four broad concentration areas: (a) engineering mechanics, including constitutive modeling, fracture mechanics, and pavement mechanics; (b) geotechnical engineering, primarily in the reliability based design; (c) high performance materials for civil infrastructures rehabilitations; and (d) natural and geological hazard management and abatement techniques. Liang’s research has garnered about 14 million in external funding from various sources. His research has resulted in approximately 100 peer-reviewed journal articles, 100 conference papers, and 40 research reports. He has co-edited six international conference proceedings and co-authored a practice manual. He has delivered about 150 presentations in national and international conferences, including invited keynote and theme lectures.

Long active in numerous professional organizations, including ASCE, TRB, DFI, and ASTM, Liang has served as Chair of ASCE Properties of Materials Committee and the ASCE National Program Committee. He has served as an associate editor for ASCE Journal of Engineering Mechanics and ASCE Journal of Geotechnical and Geoenvironmental Engineering. Currently, he is serving on the editorial board for four international journals, and has been on the executive committee for the Great Lakes Geotechnical and
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Liang has received several awards for his contributions to various organizations. Among them are the Wendell R. Ladue award from the ASCE Akron-Canton Section and the Outstanding Service award from the Executive Committee of the Great Lakes Geotechnical and Geo-environmental Engineering Council. At UA, Liang has received Louis Hill Award and Outstanding Research Award, both from the College of Engineering. In recognition of his contributions to education, research, and leadership in the society, Liang was elected to Fellow rank by the American Society of Civil Engineers in 2009.

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Dr. Miller is currently a Principal Investigator on five projects, four for local municipalities (Akron, OH, Barberton, OH, Newton Falls, OH, and Ravenna, OH) and one for The Ohio Department of Transportation (ODOT). The projects for the local municipalities involve source water sampling, data analysis, water treatment plant operations optimization, hydraulic modeling, water quality modeling, and regulatory compliance assistance. The ODOT project is for managing the wastewater generated from snow removal operations.

His research and areas of expertise include drinking water source-watershed management and sustainability including water treatment plant-treatment process optimization and drinking water quality (e.g. disinfection byproduct formation and control); water and wastewater treatment technology development and evaluation; and stormwater-watershed management and sustainability including green infrastructure implementation and impact on water quality.

Dr. Miller is an active member of the American Society of Civil Engineers (ASCE). He is the Past President (2008) of the Akron-Canton Section of ASCE, served on the National ASCE Committee on Student Activities (2006-2008). He is also the faculty adviser for the Engineers Without Borders (EWB) Student Chapter and Environmental Akron Student Chapter at The University of Akron. He has received The University of Akron College of Engineering Outstanding Teacher award (2003) and is a member of The University of Akron Patent Society (inventor listed on three patents). Prior to joining and during his appointment at The University of Akron, Dr. Miller served in The United States Army Reserve in an engineering unit (five training exercises in Honduras, one in Panama, and one in Guatemala) and left service in 1998 as a Staff Sergeant. Dr. Miller received a Bachelor of Science in Civil and Environmental Engineering degree from The University of Iowa in 1990. After completing his undergraduate degree he continued his education at The University of Iowa and finished a Master of Science in Civil and Environmental Engineering in 1992 and Ph.D. in 1995.

Ernian Pan is a Professor of Civil Engineering at University of Akron. He received his B.S. from Lanzhou University, M.S. from Beijing University, and Ph.D. from University of Colorado at Boulder. He has made outstanding contributions in boundary integral equation methods (BEMs), as applied to anisotropic magnetoelectroelastic solids in general and to quantum nanostructures in particular. He is a well-recognized expert in anisotropic and multilayered Green’s functions, and edited in 2005 a special issue on “Anisotropic Green’s Functions and BEMs” for Engineering Analysis of Boundary Elements. He has also pioneered various benchmark solutions for multiphase and multilayered composites.
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Dr. Anil Patnaik is a Professor in the Department of Civil Engineering. He joined UA after working for South Dakota School of Mines and Technology, Rapid City, SD for over six years where he was an Associate Professor at the time of leaving. He worked in universities in Western Australia prior to taking up the position in South Dakota. He earned a Ph.D. in structural engineering from the University of Calgary, and a Bachelors degree in Civil Engineering and a Masters degree in structural engineering. Furthermore, he has about seven years of industrial experience in design and construction of large industrial, commercial and offshore structures. He teaches graduate and undergraduate courses related structural engineering analysis and design including steel, reinforced concrete, prestressed concrete and composite design. His research interests include the areas of concrete materials and structures, composite structures, metal structures, large scale structural testing, and friction stir welded structures.

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Dr. Saleeb has been a Professor of civil engineering at the University of Akron since 1992. Before, he served as assistant and associate Professor of civil engineering at the University of Akron from 1984 to 1991, assistant Professor at Cairo University, Egypt from 1983 to 1984, and visiting assistant Professor at Purdue University from 1981 to 1982. Dr. Saleeb received his MS and Ph.D. degrees in Civil (structural) Engineering from Purdue University in 1979 and 1981 respectively. He also holds a B.S. in Civil Engineering from Cairo University, Egypt (1974). His research interests include computational and nonlinear mechanics, modeling of behavior of complex material systems such as shape memory alloys, anisotropic biological soft tissues, deformation and failure mechanisms of high temperature composites, damage detection/health monitoring methodologies for structures, etc. He has over a hundred publications including peer-reviewed journals, technical reports, and conference proceedings, in his areas of specialty. He has advised and directed over thirty MS theses and PhD dissertations. Dr. Saleeb has been a PI and Co-PI for more than forty projects funded by contracts/grants from such agencies as NASA, Boeing, Cleveland Clinic Foundation, National Science Foundation, Ford Motor Company, Ohio Department of Transportation, etc. At the University of Akron, he has received College of Engineering Louis A. Hill Award for Outstanding Achievement in 1995, and the Outstanding Research Award, College of Engineering in 1995. At Purdue University, he has received Nellie Munson Award for Teaching in 1981.

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Dr. Schneider is an Assistant Professor in the Civil Engineering Department at the University of Akron, as well as a registered Professional Engineer in the State of Ohio. His research areas include traffic data collection, archiving, management and analysis; the impact of geometric design on safety and operations; and crash prediction and injury-severity modeling.

Dr. Schneider is currently the Principal Investigator for the Ohio Department of Transportation’s review and development of new seasonal adjustment factors for cars and trucks. He is also involved with the Ohio Department of Public Safety and safe community organizations research involving driver crash injury-severity models. In addition to his current research, he has experience in traffic operations with work zone speed compliance, and urban arterial channelized turning lanes. Other research experiences include developing datasets that incorporate Department of Public Safety and Department of Transportation records and traffic flow parameters from traffic management centers. These datasets in association with data mining techniques, cluster, and Bayesian analysis help provide valuable information for the DOT and DPS. To date, Dr. Schneider has been the database developer and administrator on more than 1 terabyte worth of information. Dr. Schneider is an active member or friend of several professional organizations. He is an active member of the Highway Safety Manual user liaison subcommittee. His role in this committee is to review national safety related research and provide comments to the author’s on their material prior to acceptance into the Highway Safety Manual. He is also a member of American Society of Civil Engineers Applications of Advanced Technology in Transportation, Air and Waste Management Association Data Management Analysis and Quality Assurance, and On and Off Road Mobile Sources. Prior to joining The University of Akron, Dr. Schneider spent two years as an Assistant Research Scientist with the Texas Transportation Institute (TTI). Dr. Schneider received a Bachelor of Science in Civil Engineering degree from Purdue University in 1998. After completing his undergraduate degree he continued his education at Purdue and finished a Master of Science in Civil Engineering in 2001 and a Doctor of Philosophy in 2003.
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Before joining academia, Dr. Yi was a project manager in the Minnesota DOT’s ITS Office to manage several federally funded ITS operational test projects over sensors testing, adaptive signals, parking information systems, and incident detection and management. Served in the positions of research scientist and principal engineer, he first became a registered engineer in Minnesota where he interacted extensively with government offices and the private industry.

Dr. Yi has published widely in refereed journals and conference proceedings, and completed many federally and state funded projects. He is a member of many professional societies and Transportation Research Board Committees and is heading T&DI’s Intermodal and Logistics Committee of ASCE. He has served numerous panels of the Innovations Deserving Exploratory Analysis (IDEA) program under the National Research Council and the American Association of State Highway and Transportation Officials (AASHTO). Dr. Ping Yi is the Director of Ohio Transportation Consortium, a USDOT sponsored university transportation research program participated by eight universities in Ohio.
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Gunjin Yun holds a B.S. in civil engineering, M.S. in structural engineering (Korea Advanced Institute of Science and Technology 1994 and 1996, respectively) and a Ph.D. in structural engineering and mechanics (University of Illinois Urbana-Champaign 2006). He served for six years as a research engineer at Samsung Corporation in South Korea from 1996 to 2002. Prior to coming to the University of Akron, he was a postdoctoral research associate at Washington University in St. Louis. He joined the faculty of the department of civil engineering at the University of Akron in 2008.

Dr. Yun teaches graduate and undergraduate courses in advanced mechanics of materials, finite element method, structural dynamics, numerical methods in computational dynamics, nonlinear analysis in structural mechanics, earthquake engineering, theory of structures, and statics. Dr. Yun has research interests in structural health monitoring; smart materials and structures; computational intelligence with applications to smart materials and structures; nonlinear system identification. His previous research includes hybrid simulation and testing for structures under earthquake loading; application of generic algorithms to fast estimation of tumor properties for early detection of cancer; neural network based modeling of hysteretic behavior of materials and structures from the results of structural test; vibration based damage detection and model updating; material constitutive models of 2D planar reinforced concrete. His current research includes damage detection of smart structures (piezoelectric composite beam); system identification and model updating of complex structures; automatic on-line parameter identification of highly nonlinear models from the results of structural test. Dr. Yun is a member of American Society of Civil Engineers, Network Earthquake Engineering Consortium, Inc and he has served on several technical committees including seismic effects committee of ASCE SEI, structural health monitoring and control committee and dynamics committee of ASCE EMI.

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Dr. Omar is a Fellow of IEEE and the author/co-author of more than 450 technical papers extending over a wide spectrum of research areas. His current research interests include microwave theory, applications, and measurements, magnetic resonance, acoustic imaging, remote sensing, indoor/outdoor positioning systems, wideband wireless (terrestrial and mobile) communications, subsurface tomography and ground penetrating radar, antennas, and field theoretical modeling of microwave systems and components.

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Upon receiving his doctorate in 1980, he joined the former Institute for Computer Applications in Science and Engineering at NASA Langley Research center and worked on aeroacoustics. He was instrumental in developing the now popular area of computational aeroacoustics – a field that exploits conservative schemes in the application of both linear and nonlinear acoustics.

In 1983, he joined the University of Tennessee Space Institute as an assistant professor, where he began his teaching career and continued research in acoustics and electromagnetics. His first funding from NASA Langley was received during this time for the development of computational methods for atmospheric acoustics. In 1985, he joined The University of Akron as an associate professor of mathematical sciences and in 1987 he was also granted joint appointment with electrical engineering. For the past 24 years he has been with the University of Akron, taught applied mathematics and engineering topics. His research was focused on boundary conditions for compressible flows and electromagnetics, optics, modeling in materials science and in the recent times, modeling growth and simulation of coated nanofibers and their applications in field emissions and wound healing. He has been working in collaboration with chemical engineers in filtration and biomedical engineers in neural network simulations. He published 44 peer reviewed journal articles, 25 NASA technical reports, and several conference proceedings and book chapters. During 1995-97 academic years, he was a program director of applied mathematics at the National Science Foundation, and from 1999 – 2007, he was the associate dean for research and graduate studies in engineering at the University of Akron.

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Before coming to the University of Akron, Tsukerman worked at the Department of Electrical & Computer Engineering, the University of Toronto (1990–1995). A joint project with GE Canada involved electromagnetic field analysis and noise reduction in large electric motors. The software developed in the course of the project is still being used by GE. Tsukerman’s academic degrees are from the Polytechnic University of St. Petersburg, Russia: a combined B.Sc. / M.Sc. degree (with honors) in control systems (1982) and a Ph.D. in electrical engineering (1988).

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Dr. Felicelli has worked for over two decades in the area of computational modeling of solidification processes, with particular application to casting, welding, and additive manufacturing. He has also led several projects involving multi-scale transport phenomena, nano-fluidics, magnesium alloys, and tire heating. He is the author of some of the pioneer works in computer modeling of freckle segregation during solidification, having written several journal articles in the area of macrosegregation and porosity defects in solidification processes and more than 100 peer-reviewed publications during his career. He has directed projects related to casting and solidification, additive manufacturing, and large-scale parallel simulations of microstructures, among other subjects. His work has been sponsored by NSF, DoE, DoD, NASA, and industry, with a total funding of over $15M as PI or co-PI.
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His research topics include friction, adhesion, wear and lubrication at micro/nano scales, laser-matter interaction in material processes, and energy transport at interfaces.

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Dr. Ling received her Ph.D. in industrial engineering from Purdue University, her M.S. in industrial engineering from North Carolina Agriculture & Technical State University, and B.S. in industrial foreign trade with a minor in aero-technology engineering from Beijing University of Aeronautics and Astronautics. Her research interests include

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Dr. Loth received his B.S. degree from West Virginia University and his M.S. degree from the University of Cincinnati in the area of aerospace engineering. He received his Ph.D. degree from the Georgia Institute of Technology in the area of mechanical engineering. In 1993, he was awarded the NSF-NATO Postdoctoral Fellowship and spent this year at the University of Aix-Marseilles in France. He then worked as a post-doctoral fellow in the Bioengineering Department at The Johns Hopkins University. He worked 12 years at the University of Illinois at Chicago as a faculty member in the Department of Mechanical and Industrial Engineering. Dr. Loth obtained several teaching awards while at the University of Illinois at Chicago and served as the department’s undergraduate director for four years. Dr. Loth’s research interest is in the area of fluid dynamics of biological fluids and its relationship with disease. He has developed computational and experimental techniques to model biological flow systems. These flow systems include blood flow within arterial bifurcations and cerebral spinal fluid motion within the spinal canal. He been an investigator on research projects funded by NSF, NIH, private foundations and industry. He has authored 34 refereed journal publications, three book chapters, and 46 refereed conference papers/abstracts. His work has been cited over 350 times in the literature (according to the ISI Web of Science). He has co-organized three international workshops focusing on biological flow simulation and its relevance to arterial disease and diseases related to cerebrospinal fluid. In addition, his work on carotid fluid dynamics was recently featured in a video as the multimedia portion of a New York Times article by Gina Kolata “Lost Chances for Survival, Before and After Stroke” published May 27th, 2007.
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Before joining The University of Akron as Associate Dean for Research in the College of Engineering, Dr. Ajay Mahajan was a Professor in the Department of Mechanical Engineering and Energy Processes at Southern Illinois University Carbondale (SIUC). He worked there for eleven years after working for four years at Lake Superior State University in Michigan. He got his Ph.D. and MS, both in Mechanical Engineering, from Tulane University in New Orleans. He is the President and co-founder of a think tank company called Clipius Technologies and has Chaired an ASME technical panel (now a technical committee – Model Identification and Intelligent Systems - MIIS) for 3 years. He was recently awarded the ASME 2008 MIIS Honorary Award in Intelligent Systems for significant contributions and service to the profession. His research interests include robotics, automation, controls, intelligent sensors, intelligent system health monitoring (ISHM), biomedical devices. He has been a PI or Co-PI on over $3.0 million of grants/contracts funded by NASA, Formula One race teams, Federal Highway, Caterpillar, Illinois Clean Coal Institute (ICCI), NSF, SME, etc. He won the First Prize in the medical category of NASA Tech Brief’s 2007 Create the Future Design Contest for an ultrasonic based neuro-navigation system for real time image guided brain surgery. His funding with NASA has been in the area of intelligent sensors and their Integrated Structural Health Monitoring (ISHM) vision. At SIUC, he has received the annual Dean Juh Wah Chen Outstanding Faculty Award for 2008 in the College of Engineering, the 2008 SIUC Excellence Through Commitment Outstanding Scholar Award for the College of Engineering, the annual Dean Kenneth Tempelmeyer Outstanding Faculty Research Award for 2004 and the Dean Juh Wah Chen Outstanding Research Paper Award for 2003 in the College of Engineering. He has also received the Outstanding Teacher Award in the MEEP department at SIUC four times. He has over a hundred peer-reviewed journal publications and conference proceedings, and has advised twenty-four graduate students.

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Dr. Gaurav Mittal received the degree of Bachelor’s of Technology in Mechanical Engineering from Indian Institute of Technology (IIT), Kharagpur, India in 1998. He received the degree of Master’s in Computer Applications from Indian Institute of Technology (IIT), Delhi, India in 2001. He pursued a Ph.D. degree in Mechanical Engineering with specialization in Combustion at Case Western Reserve University, Cleveland, and graduated in 2006. Dr. Mittal’s research focuses on understanding the combustion characteristics and combustion strategy of practical hydrocarbon fuels. His research interests include design of novel and well-characterized experimental
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Dr. Gregory Morscher has worked in the area of high temperature ceramic matrix composites for over twenty years. He has been affiliated with NASA Glenn (formerly Lewis) research center as a research engineer (CWRU) and then senior research scientist (OAI). His main focus has been the understanding and improvement of the SiC/SiC composite system. He studied the high temperature creep properties of ceramic fibers and developed a simple bend stress relaxation test to evaluate relative creep properties of ceramic fibers. He has also made considerable contributions to the improvement of BN interphases for the purpose of improving the intermediate temperature capability of SiC/SiC composites in oxidizing environments. Dr. Morscher has used non-destructive techniques such as acoustic emission and electrical resistance during room and high temperature testing as a monitor and measure of the amount of matrix cracking and other forms of damage that occurs as a function of stress, time, and environment (oxidation). This has served as the basis for modeling stress-strain behavior of SiC/SiC composites for different woven architectures and led to the development of intermediate and high temperature stress-rupture models for SiC/BN/SiC composites in air as a function of stress, time, and accumulated damage. More recently, he has focused on the effect of fiber-architecture and matrix-type on time-dependent mechanical behavior at high temperatures (≥ 1200°C) as well as joining ceramic composites to metals. He received his B.S. degree in Ceramic Engineering at The Ohio State University in 1986 and his M.S. degree in Materials Science and Engineering at Case Western Reserve University in 1989. Later, he received his Ph.D. degree in Materials Science and Engineering at Case Western Reserve University in 1999, while working as a Research Associate at NASA Glenn. Dr. Morscher has authored or coauthored over 80 papers in refereed journals or proceedings and has been a frequent contributor to NASA Glenn’s annual Research and Technology Reports. He has received several OAI achievement awards, two NASA Tech Brief awards, two NASA Turning Goals into Reality awards, the 2004 NASA Public Service Medal and the Richard M. Fulrath Award from the American Ceramic Society in 2005.

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Dr. Povitsky is a "computational experimentalist" who develops and uses high-performance computational fluid dynamics (CFD) software for solution of advanced thermo-fluids problems at wide range of Reynolds and Mach numbers. His research is in the emerging areas of CFD including parallel numerical algorithms, computational aeroacoustics, and fluid mechanics for nano-technology. Before joining University of Akron in 2003, Dr. Povitsky was a senior scientist at the Institute of Computer
Applications (ICASE) at NASA Langley Research Center. He has been summer faculty fellow at Air Force Research Laboratory (AFRL) in 2005-2011. His research has been funded by the US Air Force, Air Force Research Laboratory, NASA and the State of Ohio. He has published approximately 50 papers in peer-reviewed journals, graduated 5 Ph.D. students, developed new micro- and nano-fluidic class and new Wind tunnel based ME Lab at the University of Akron.

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Dr. Quinn was awarded the B.M.E. degree from Georgia Tech in 1991 and, in 1995, a Ph.D. from Cornell University in the Department of Theoretical and Applied Mechanics. He is currently an Associate Professor on the faculty of the University of Akron in the Department of Mechanical Engineering, and holds a joint appointment in the Applied Mathematics Division. His research interests lie in the area of applied dynamical systems and mechanics. Specifically, he has considered the effects of resonances in nonlinear systems with applications to rotordynamics, spacecraft dynamics, and the mechanisms by which energy is transferred through mechanical systems, including applications in energy harvesting. Since joining the University of Akron, he has initiated studies of differential collision models and research into structural health monitoring. He is currently collaborating with researchers at Sandia National Laboratories modeling the dynamic response and structural dissipation induced by mechanical interfaces such as lap joints and bolted connections. In addition, he has worked in several related areas, including the modeling, simulation, and control of thermo-acoustic instabilities in aeropropulsion systems, celestial mechanics, nonlinear thermoelastodynamics, nonlinear control systems, and the evolution of virulence in age-dependent populations. He has published numerous papers in archival journals and has presented his work at national and international scientific meetings. He currently serves as an Associate Editor for the Journal of Vibration and Acoustics, Mathematical Problems in Engineering, and is on the Editorial Board of Nonlinear Dynamics. Finally, in 2005 he was selected as the recipient of the Tau Beta Pi Outstanding Teacher Award for the College of Engineering.

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Dr. T. S. Srivatsan (Dr. Sri) is Professor of Mechanical Engineering at the University of Akron (Akron, Ohio). He successfully finished his undergraduate degree: Bachelor of Engineering (BE 1980) in Mechanical Engineering from Bangalore University: Visvesvaraya College of Engineering in 1980, and subsequently graduate degrees [Master of Science in Aerospace Engineering (M.S. 1981) and Doctor of Philosophy in Mechanical Engineering (Ph.D. 1984)] from Georgia Institute of Technology, specializing in fields synergizing all aspects related to processing, characterization and mechanical behavior of engineering and engineered materials. Subsequent to graduating in 1984, Dr. Srivatsan worked in the position of Research Engineer at the Georgia Tech. Research Institute and later as Lead Project Engineer and Manager of Research and Development at Materials Modification Inc. (Falls Church, Virginia). Dr. Srivatsan joined the faculty in The Department of Mechanical Engineering at The University of Akron in August 1987. Since then, he has instructed undergraduate and graduate courses in the areas of: (i) Advanced Materials and Manufacturing Processes, (ii) Mechanical Behavior of Materials, (iii) Fatigue of Engineering Materials and Structures, (iv) Fracture Mechanics, (v) Introduction to Materials Science and Engineering, (vi) Mechanical Measurements, (vii) Design of Mechanical Systems and (viii) Mechanical Engineering Laboratory.

He has edited/co-edited/authored two (2) archival monographs and forty-eight [48] books in areas cross-pollinating mechanical design; Processing and Fabrication of Advanced Materials; Deformation, Fatigue and Fracture of ordered Intermetallic Materials; Machining of Composites; Failure Analysis; and Technology of Rapid Solidification Processing of Materials. His research areas currently span (a) the fatigue and fracture behavior of advanced materials to include monolithic(s), intermetallics, Nano-materials and metal-matrix composites; (b) processing techniques for advanced materials and nanostructure materials; (c) inter-relationship between processing and mechanical behavior; (d) electron microscopy; and (e) failure analysis. His funding comes primarily from both industries and government agencies. Dr. Srivatsan also serves as the co-editor of the international journal on Materials and Manufacturing Processes. His research has enabled him to deliver over One-Hundred Ninety [190] technical presentations in: (a) National and International meetings and symposia; (b) Technical/Professional societies; and (c) Research and Educational institutions He has since graduation authored and/or co-authored over Six-hundred plus (600+) archival publications spanning (i) International Journals, (ii) Chapters in books, (iii) Proceedings of national and international conferences, (iv) Reviews of books, and (v) Technical Reports. He has the highest citations in the College of Engineering at the University of Akron. Also, through the years (1987-present), he has personally mentored, supervised and successfully graduated over 50+ students at the graduate degree level [Master of Science (MS) and Doctor of Philosophy (PhD)], and advising over 500+ students at the undergraduate level.
Dr. Tan earned his Ph.D. in aerospace engineering from Tokyo Metropolitan University in Japan, his Master of Engineering and Bachelor of Engineering degrees from National University of Singapore. Research interests include aerospace materials and structures; composite materials and structures; acoustic/elastic metamaterials; fracture mechanics; impact mechanics; damage/delamination of advanced composites; and wave propagation.

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Dr. Wong began his graduate training in 1993 in mechanics and mechanisms of fracture of polymer blends with and without glass fiber reinforcements at UMass Amherst, working with Shanti V. Nair. Later
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Dr. Zhe received his M. Phil. and Ph.D. degree in Mechanical Engineering from Columbia University in New York. His research interests include MEMS, sensors and actuators, microfluidics devices, smart materials and structures. He is currently working on intelligent sensors for bioparticle detection, and micro scale transducers for micromanipulation, structure health monitoring and lubricant oil debris monitoring. He has authored or co-authored 45 technical papers and is the authors of two US patents. Prior to joining the University of Akron, he was a R&D Engineer in Advanced Micro Sensors and Fitel Technologies. Dr. Zhe is a member of ASME, IEEE and ASEE.