

Building Defense Research Capacity at Historically Black Colleges and Universities, Tribal Colleges and Universities, and Minority-Serving Institutions

Committee

Oscar Barton

Chair

Oscar Barton, Jr., PhD, PE is a Professor and Dean of the Morgan State University Clarence M. Mitchell, Jr. School of Engineering. A native of Washington, D.C., he received his B.S. in Mechanical Engineering from Tuskegee (Institute) University, his M.S. in Mechanical Engineering and Ph.D. in Applied Mechanics from Howard University in 1993. Barton joined Morgan Fall 2020, after completing a 6 years at George Mason University and a 22-year career at the US Naval Academy. Dr. Barton's research focuses on the development of approximate closed form solutions for linear self-adjoint systems, those that govern the responses of composite structures, and the analysis of dynamic systems. More recently, he investigated the dynamic response of flexible composite structures subject to periodic and random excitation. He has mentored numerous midshipmen through independent research projects and has directed two Trident Scholars, the Naval Academy's flagship research program. He has published over 60 journal and conference articles on these topics. While at the US Naval Academy and in its 163-year history, Dr. Barton was one of only three African-Americans to obtain the rank of tenured full professor and the first to achieve this milestone in the Division of Engineering and Weapons, Division I. In 2010, he assumed the role of chairman of the mechanical engineering department, responsible for its strategic leadership and planning of its faculty, midshipmen-student body, curriculum and resources. During his time as chair, the department revived and accredited the General Engineering program and created the nuclear engineering program, the first ever offering at the academy. Dr. Barton chaired the largest department in the Division I consisting of 42 civilian and military faculty professionals, and promoted a vibrant research and academic environment in energy and propulsion, nuclear energy, structures and materials, and design. As the founding department chair at Mason, Dr. Barton ushered growth of the department from 3 faculty and 12 students to 17 faculty and 385 undergraduate students and 6 doctoral students as of spring 2020. Under his leadership the undergraduate program received initial EAC-ABET accreditation retroactive to fall of 2015, and was reaccredited to fall 2024, established state-of-the-art teaching and research labs on the Mason's Sci-Tech campus, and authored an interim Ph.D. program which is in its final stages of seeking approval from the State Council of Higher Education for Virginia, SCHEV. A fellow of ASME, Barton is actively involved in academic innovations and program assessment. He chairs ASME's Committee on Engineering Education, is member of ASME Public Affairs and Outreach Council, and is a member-at-large on the Engineering Accreditation Commission's Executive Committee of ABET, after having served numerous years as a program evaluator and commissioner. He is a registered engineer licensed to practice engineering in the State of Maryland.

Bryn Adams

Member

Dr. Bryn L. Adams received a BS in Biology in 2001 and a PhD in Interdisciplinary Biology in 2009 from the University of North Carolina at Charlotte. Her doctoral studies included a variety of research projects in the field of applied and environmental microbiology. Dr. Adams completed two postdoctoral fellowships; the first was a collaborative project, as a National Academy of Sciences postdoctoral fellow, between DEVCOM Chemical Biological Center and the Institute of Bioscience and Biotechnology Research at the University of Maryland at College Park focused on the development of non-specific threat agent detection using simple biological sensing and signal transduction pathways. The second fellowship was with DEVCOM Army Research Laboratory as an Oak Ridge Associated Universities postdoctoral fellow where she conducted research into the development of synthetic molecular recognition agents for biosensing and biomaterials. In 2014, Dr. Adams converted to a federal civilian research scientist at the Army Research Lab. She has led the Synbio Tools and Chassis Team in the Biotechnology Branch since 2018. Her research efforts currently focus on developing synthetic biology tools for non-model host bacteria and establishing the capability to synthetic biology from the lab and into the hands of the Warfighter. She has published over 20 peer-reviewed manuscripts on a wide range of bacterial biotechnology topics across several disciplines and was awarded DoD Scientist of the Quarter in 2019 for her contributions to the field of biotechnology for the DoD. Dr. Adams is currently on a one-year detail assignment to the Office of the Undersecretary of Defense for Research and Engineering, where she leads the Education and Workforce Development component of the Biotechnology Modernization Priority.

Melvin Greer

Member

Melvin Greer is Chief Data Scientist, Americas, Intel Corporation. Melvin is responsible for building Intel's data science platform through artificial intelligence, machine learning, and neuromorphic computing to accelerate transformation of data into a strategic asset for global enterprises. His systems and software engineering experience has resulted in patented inventions in cloud computing, synthetic biology, and IoT bio-sensors for edge analytics. He functions as a university professor and principal investigator where he significantly advances the body of knowledge in basic research and advanced engineering. Melvin is one of the 2018 LinkedIn Top 10 Voices in data science and analytics. He also received the Washington Exec inaugural Pinnacle Award as the 2018 Artificial Intelligence Executive of the Year. Melvin received the 2017 BDPA Lifetime Achievement Award and the 2012 BEYA Technologist of the Year Award which recognize his outstanding technical contributions that have had a material impact and high value to society as a whole. Melvin is a member of the American Association for the Advancement of Science (AAAS) and has served for eight years on the National Academies' Government University Industry Research Roundtable (GUIRR). Melvin has been appointed Senior Advisor and Fellow at the FBI IT and Data Division. Melvin is charged with the acceleration of the FBI mission by supporting appropriate data collection, data analytics, discovery and visualization via advanced data science and AI techniques.

Keith A. McGee

Member

Dr. Keith A. McGee, a native of Quitman located in Clarke County MS, began his post-secondary education at Mississippi Valley State University, majoring in Biology culminating with a Doctor of Philosophy (Ph.D.) degree from the University of Southern Mississippi in Molecular Biology. Dr. McGee's research area, and his research focused on a family of ATP Transport Proteins, specifically those involved in phenotypic Multi-Drug resistance. As a faculty member, he sustained a productive graduate student training program, advising many Masters Degree seeking students, along with many undergraduates, and summer research students. Dr. McGee has served in multiple administrative capacities at Alcorn State University, most recently he was appointed to serve as the inaugural Associate Provost for Research, Innovation, and Graduate Education (AVP, IGE). In this role, Dr. McGee is responsible for providing leadership in developing a clear research vision and growing the University's research footprint while leading and elevating the university's interdisciplinary research activities. Dr. McGee is charged with promoting an understanding and drive for new research opportunities, working with the university deans on all aspects of research and graduate education to ensure alignment with their specific disciplines, while supporting and expanding innovative graduate programs and scholarly activity.

Abigail Newsome

Member

Abigail S. Newsome, a native of Itta Bena, Miss., attended Leflore County High School. After her graduation, she studied biology at Mississippi Valley State University (MVSU) and later attended the University of Southern Mississippi where she obtained her Doctorate of Philosophy in Biology with a concentration in Molecular Biology. She then began her professional tenure at Mississippi Valley State University in August of 1997 where she began teaching Biology and Microbiology in the Department of Natural Sciences and Environmental Health. During this time, she worked closely with the MVSU Football Team serving as Film/Video Coordinator. Dr. Newsome has also served as a visiting professor of biology at the University of the Virgin Islands in St. Thomas, USVI as well as engaged in various collaborations and partnerships at universities across the country and abroad. Dr. Newsome presently serves as Mississippi Valley State University's Faculty Athletics Representative. Her academic position at MVSU is the Director of Bioinformatics where her efforts are focused on graduate education and research in genomics. Dr. Newsome and her husband, Dr. Albert L. Love, have 3 adult children and 2 grandsons.

Shawne Raiford

Member

Shawné Raiford, MBA is Space Workforce 2030 Program Manager, DEI at The Aerospace Corporation. She has 10 years of diverse experience working in the aerospace and defense industry. She was honored by the Aerospace Women's Committee (AWC) of The Aerospace Corporation as an Aerospace 2018 Woman of the Year and served as president of the AWC. She has previously received numerous honors and awards while at Aerospace, including the Commitment to our People: Diversity and Inclusion Corporate Award. She has also been involved in several committees and clubs at Aerospace, such as the ABC, the Office Professional Advisory Team, and the Aerospace Employees Association. After spending four years as a college basketball player, Raiford graduated with a degree in Sociology from California Baptist University. Raiford joined Aerospace where she continued her education through various courses and training programs. After receiving the Aerospace Corporate Fellowship, she obtained her MBA from Cal Baptist in 2021. Raiford mentors university students and serves as a mentor for Jefferson Elementary School in Compton and the Compton Early College High School Science Competition. She also participates in community-based STEM events like Girls STEM Day and was appointed the chair of the K-12 Outreach for the Society of Women Engineers-Los Angeles in 2016.

Tom Tubon

Member

Thomas Tubon is the Chief Workforce Development Officer for BioMADE. Prior to his appointment with BioMADE, he served as a Professor in the Biotechnology Program at Madison Area Technical College for 13 years. During this time, he led several National Science Foundation Advanced Technological Education initiatives to establish and scale an emerging technology program in Stem Cells and Cell Manufacturing and directed a National Coordination Network in Advanced Manufacturing of Cell and Tissue Products. While at Madison College, Dr. Tubon was responsible for the development of bioscience workforce and strategic implementation of programs for local, regional, and national-level adoption and scale-up. In this role, he has facilitated the creation of a broad network of industry, community, and academic stakeholders designed to foster career pathways in Science, Technology, Engineering, and Mathematics (STEM). Dr. Tubon also serves as a mentor with the NSF ATE Mentor Connect and Project Vision Programs. Dr. Tubon held leadership roles with the NSF ATE InnovATEBIO Center for Biotechnology Education, and the NSF Advancing Research Impact in Society (ARIS) Center with a focus on education, workforce development, and strategic partnerships. Dr. Tubon holds a Ph.D. in Molecular Genetics from Stony Brook University and Cold Spring Harbor Laboratory and a BS in Molecular Biology from San Diego State University.

Abraham Wolcott

Member

Prof. Abraham Wolcott is a physical chemist who focuses on the surface chemistry of nanoscale and bulk materials for biological labeling and alternative energy productive (solar cell research). He received a B.S. and PhD with Prof. Jin Z. Zhang at UC Santa Cruz (Jin Zhang group). He received an NSF postdoctoral fellowship and worked with Prof. Xiao Yang Zhu (XYZ Group at Columbia). at UT Austin, who then moved to Columbia University. Prof. Wolcott also worked with Profs. Jon Owen (Jon Owen lab Columbia) and Dirk Englund (Dirk Englund at MIT) as a joint postdoctoral scientist at Columbia and MIT before coming to San Jose State University. Prof Wolcott has taught physical chemistry lecturers (Chem 160) and laboratory (Chem 162L) and has received several grants to incorporate technology into the physical chemistry course curriculum. One pedagogical tool that is being incorporated is the use of virtual reality (VR) into the classroom. Thermodynamics (Thermodynamics), kinetics (Chemical kinetics), quantum mechanics (Quantum mechanics) and spectroscopy (Spectroscopy) are topics in which VR-based lesson plans can be developed.

Chad Womack

Member

Dr. Chad Womack is the National Director of STEM Initiatives at the UNCF headquartered in Washington, D.C. Dr. Womack's work portfolio includes the UNCF Merck Fellowship Program, UNCF STEM Scholars Program and the HBCU Innovation, Commercialization and Entrepreneurship (ICE) Initiative. More recently, Dr. Womack led the sourcing, development and

implementation of the UNCF STEM Scholars Program representing a \$48M+ and 10-year commitment to support 500 academically talented African-American high school students pursuing STEM as majors in college and careers in the tech-industry. Prior to joining the UNCF, Dr. Womack co-founded The America21 Project and DC Innovates, both innovation-based community and economic development nonprofit organizations dedicated to empowering metro-centers and underserved communities through STEM education, tech entrepreneurship and access to capital. Dr. Womack also founded the Philadelphia Biotechnology and Life Sciences Institute as a nonprofit initiative dedicated to addressing unmet educational and workforce development needs of the City of Philadelphia, and is a Co-Founder of 3GEN Vaccines a nano-biotechnology company. Prior to his entrepreneurial ventures, Dr. Womack completed several research fellowships at the National Institutes of Health (NIH), in the National Institutes for Allergy and Infectious Diseases (NIAID) Vaccine Research Center (VRC) and at the Harvard AIDS Institute and the Harvard School of Public Health in the Department of Immunology and Infectious Diseases. Dr. Womack earned his Ph.D. in Biomedical Sciences from the Morehouse School of Medicine, and is a proud graduate of Morehouse College where he was a Biology and Chemistry major. Dr. Womack resides with his family in his home city of Philadelphia, PA.

Andre Porter

Staff Officer