

## Energy Sciences Leadership Group 2016-2017



### Charles Black

#### Brookhaven National Laboratory

Dr. Charles Black is a Senior Scientist and Director of the Center for Functional Nanomaterials, a Nanoscale Science Research Center supported by the Department of Energy at Brookhaven National Laboratory. The CFN, with a permanent staff of 30 scientists and 11 administrative support personnel, has a dual mission of carrying out a world-leading program of internal research and being a preeminent user facility for the nanoscience and nanotechnology communities. Each year the CFN supports approximately 500 Users from research groups around the world.

Prior to becoming Director in 2016, Dr. Black was Group Leader for the CFN Electronic Nanomaterials group for 9 years, leading a research program exploring the use of nanostructured material architectures for solar energy conversion. His research interests include employing self-assembly based methods for constructing solar nanomaterials.

From 1996 to 2006, Dr. Black was a Research Staff Member at the IBM Thomas J. Watson Research Center in Yorktown Heights, New York. His research at IBM investigated using polymer self assembly for fabrication of high-performance semiconductor electronics. During his career Dr. Black has also performed experimental research in low-temperature scanning tunneling microscopy, single-electron tunneling devices, superconductivity in metal nanoparticles, nanocrystal-based electronic devices, and ferroelectric non-volatile memories.

Dr. Black earned the Ph.D. degree in Physics from Harvard University in 1996, and B.S. degrees in Physics and Mathematics from Vanderbilt University in 1991. He has authored more than 80 scientific publications and conference proceedings, and four chapters of books. He currently holds 46 US Patents. Dr. Black is a Fellow of the American Physical Society, a Member of the Board of Directors of the Materials Research Society, and a Senior Member of the IEEE.

## Energy Sciences Leadership Group 2016-2017



**Johney Green, Jr.**

### **National Renewable Energy Laboratory**

Dr. Johney Green is the Associate Laboratory Director for Mechanical and Thermal Systems Engineering. He oversees the laboratory's transportation, buildings, wind, water and geothermal research programs. He was previously at Oakridge National Laboratory where he held a number of leadership roles including director of the Energy and Transportation Science Division which develops and deploys technology that enables America to achieve energy independence, energy security, global economic leadership, and environmental sustainability.

Prior to joining NREL in August 2016, Dr. Green was at Oak Ridge National Laboratory since 1995 conducting automotive research focused on engine and vehicle experiments, combustion modeling, and the control of combustion instabilities. During the course of that research, he joined a team working with the Ford Motor Company seeking ways to extend exhaust gas recirculation (EGR) limits in diesel engines to simultaneously reduce nitrogen oxide and particulate matter emissions. The following year, he continued this research collaboration, working on-site at Ford's Scientific Research Laboratory on modeling and experimental research for advanced diesel engines designed for light-duty vehicles. He earned his Bachelor of Science degree in mechanical engineering from the University of Memphis and his Master's and Ph.D. degrees in mechanical engineering from the Georgia Institute of Technology. In 2003 Dr. Green completed a year-long off-site assignment in Washington, D.C., at the Department of Energy's Office of Vehicle Technologies serving as technical coordinator for the 21st Century Truck Partnership, which seeks to develop advanced technologies for increasing the efficiency of heavy-duty trucks and buses.

In 2015, Johney was elected fellow of SAE International, the professional society of mobility engineers. He has received several awards during his career and holds two U.S. patents in combustion science. Additionally, he is the author or coauthor of several technical publications.

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### Nancy M. Haegel

#### National Renewable Energy Laboratory

Dr. Nancy M. Haegel is Center Director for the Materials Science Center in the Materials and Chemical Sciences Directorate at the National Renewable Energy Laboratory (NREL). She leads an organization of approximately 90 staff, associates, post-doctoral, and graduate students providing the fundamental and applied materials science discovery and problem-solving for current and next-generation renewable energy and energy-efficient technologies.

Dr. Haegel joined NREL in 2014, after ten years at the Naval Postgraduate School in Monterey, California, where she was a Distinguished Professor in the Physics Department. Her research interests are in electronic materials and devices, with emphasis on characterization of carrier transport, high resistivity semiconductors and infrared imaging and detection. She has pioneered the technique of integrated electron beam and near-field optics for transport imaging of electronic materials. Her group has also developed new IFF (Identification Friend or Foe) technologies for both individual shooters (in collaboration with SOCOM) and vehicles (in collaboration with ONR and the Marine Corps Experimentation Center) based on novel infrared emitters. Haegel is the author or co-author of ~ 120 publications and has received research support from NSF, NASA Office of Space Science, Research Corporation, DARPA, the Packard Foundation, the Marine Corps Warfighting Laboratory, SOCOM and the Office of Naval Research.

Dr. Haegel received her BS degree in Metallurgical Engineering and Materials Science from the University of Notre Dame and a PhD in Materials Science from the University of California, Berkeley. She was a post-doctoral scientist at Siemens Research Laboratories in Erlangen, Germany before joining the faculty in the Department of Materials Science and Engineering at UCLA. Prior to her appointment at NPS, Dr. Haegel was Professor of Physics at Fairfield University in Fairfield, Connecticut. She was awarded the 2004 APS (American Physical Society) Prize to a Faculty Member for Research in an Undergraduate Institution for her work at Fairfield and has served on the Committee on the Status of Women in Physics of the American Physical Society and the Scientific Advisory Committee for Research Corporation.

Professor Haegel was the recipient of the TRW Excellence in Teaching Award at UCLA, the Alpha Sigma Nu Teacher of the Year Award at Fairfield University and the Admiral John Jay Schieffelin Award for Teaching Excellence at NPS. She has supervised 9 PhD dissertations and over 45 master's degree theses at NPS and UCLA. Dr. Haegel is currently a member with almost twenty years of service on the Board of Trustees of the University of Notre Dame, served on the Board of Trustees of Stonehill College and was a 2012 Fulbright Senior Scholar at Hebrew University.

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### Michael A. Jaworski

#### Princeton Plasma Physics Laboratory

Dr. Michael Jaworski is currently a Research Physicist at the Princeton Plasma Physics Laboratory. He currently leads the Materials and Plasma-Facing Components Topical Science Group on the National Spherical Torus Experiment-Upgrade (NSTX-U) project: a US Department of Energy User Facility and the world's largest and most powerful spherical torus fusion experiment. In this capacity he is leading development of advanced components featuring the use of self-healing materials such as liquid metals as well as conventional, high-temperature refractory metals. Jaworski is also applying these same concepts for materials to problems outside of fusion plasma physics by developing liquid components for advanced power plant systems based on combustion heat sources. Such advanced power plant systems could be critical to improving the efficiency of these energy sources and reducing their carbon intensity.

Jaworski joined the Princeton Plasma Physics Laboratory in 2010 after receiving his Ph.D. from the University of Illinois at Urbana-Champaign. An Illinois-native, he holds degrees in Mechanical Engineering (B. Sc.) and Nuclear Engineering (M. Sc. and Ph.D.) from the University of Illinois. He is also a first generation American as his mother immigrated to the US from Mexico as a young child.

Jaworski is author or co-author of over 40 peer-reviewed journal articles since 2004. He serves in the US Burning Plasma Organization as deputy leader of the Pedestal and Divertor/Scrape-off Layer Topical Group. He also serves as the NSTX-U machine representative to the International Tokamak Physics Activity Divertor/Scrape-off Layer (ITPA-DSOL) group and is a member of the Princeton Plasma Physics Laboratory Lithium Experts Committee. His favorite quote is by N. Machiavelli: Make no small plans for they have no power to stir the souls of men!

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### Amy Marschilok

#### Energy Frontier Research Center (EFRC), Stony Brook University

Dr. Amy Marschilok is the Center Operations Officer for the molecular to Mesoscale (m2M) Energy Frontier Research Center at Stony Brook University, funded by the Department of Energy's Office of Basic Energy Services. She holds concurrent positions at Stony Brook University and the University at Buffalo. Dr. Marschilok is a tenure track University Instructional Specialist, a Research Professor of Chemistry, and a Research Associate Professor of Materials Science and Engineering at Stony Brook University. She is also the Laboratory Manager of the Advanced Power Sources Laboratory at the University at Buffalo.

Dr. Marschilok was previously a Research Assistant Professor of Chemistry, Chemical and Biological Engineering, and Electrical Engineering at the University at Buffalo and a Senior Scientist in Battery Research and Development at Greatbatch, Inc. Dr. Marschilok earned her Ph.D. in Inorganic Chemistry and B.A. in Chemistry with a minor in English at the University at Buffalo.

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### Lia Meringa

#### SLAC National Accelerator Laboratory

Dr. Lia Meringa was born in Greece in 1960. After attending all-girl middle and high schools, Meringa enrolled at the University of Athens to study physics. She subsequently completed a Master's of Science in Physics and a Master's of Science in Mathematics at the University of Michigan. After earning her Ph.D. from the University of Michigan, Ann Arbor, in 1989, where she worked at the U.S. Fermi National Accelerator Laboratory, she joined the accelerator theory group as a visiting physicist at Stanford's SLAC National Accelerator Laboratory in Menlo Park, California. Three years later, she joined the Thomas Jefferson National Accelerator Facility in Newport News, Virginia. She worked her way up through the ranks and in 2002 became director of the Center for Advanced Studies of Accelerators (CASA). In 2008, TRIUMF, Canada's national laboratory for particle and nuclear physics, recruited her to lead its accelerator program, making her one of the most senior scientists in Canada. In 2015, Meringa joined the SLAC National Accelerator Laboratory as its Associate Director for Accelerators, and professor at Stanford University.

Meringa research interests include the physics and technology of superconducting RF linacs; energy recovery linacs and applications to free electron lasers, synchrotron radiation sources and electron-ion colliders; rare isotope beam production and acceleration; X-ray free-electron lasers and applications; advanced acceleration concepts and applications. She has been involved in more than three dozen different advisory boards and committees in every region of the world.

Meringa was elected a fellow of the American Physical Society (APS) in 2006. Subsequently, she was elected as Chair of the APS Division of Physics of Beams. In 2013 she was awarded the Minerva Foundation Women in Science Award for Community Leadership and Excellence.

Since 2016, Meringa is a professor of Particle Physics and Astrophysics and Photon Science, Stanford University. While she was at TRIUMF, she was an adjunct professor of physics and astronomy at the University of British Columbia and the University of Victoria, and established the first graduate student program in accelerator physics in Canada.

Meringa has authored or co-authored 28 peer-reviewed journal publications, 97 conference proceedings, and 4 books. She has delivered numerous invited talks and seminars around the world and has chaired or helped organize 19 international, scientific conferences.

Presently she is the chair of the newly formed IUPAP Working Group on Accelerator Science.

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### Timothy I. Meyer

#### Fermi National Accelerator Laboratory

Dr. Tim Meyer is Chief Operating Officer at the Fermi National Accelerator Laboratory, a national laboratory of the U.S. Department of Energy focused on particle physics and accelerator science and technology. He is a member of the four-person executive leadership team and contributes in setting the direction of the laboratory, managing the 1,800 person workforce, guiding compliance and performance of the entire laboratory, and developing new partnerships and opportunities.

Before coming to Fermilab, Meyer served as Head of Strategic Planning and Communications at TRIUMF, Canada's national laboratory for particle and nuclear physics in Vancouver, Canada, where he was responsible for public affairs, business-development activities, and communications and outreach. He played a key role in Canada's national discussions about producing medical isotopes using accelerators as well as British Columbia response and public communication during the Fukushima crisis.

Previously Meyer served as a Senior Program Officer at the U.S. National Academies, providing advice to the U.S. government on science and technology. He worked on topics ranging from U.S. participation in an international burning-plasma experiment, priority-setting for large-facility research projects at the U.S. National Science Foundation, stewardship of mid-sized materials-research facilities, and the future path for U.S. particle physics. He received several distinguish-serviced awards while at the U.S. National Academies. Since his tenure there, Meyer has advised national laboratories on communications and strategic planning and has chaired international reviews of U.S. labs in these areas.

Meyer earned his Ph.D. in experimental particle physics from Stanford University studying the nature and time-evolution of the bottom quark where he received both the Kirkpatrick Award as well as the Centennial Teaching Award. In 2011, Meyer was selected by Business in Vancouver as one of the Top 40 Professionals Under 40 years old. When not working, he reads pulp fiction on his Kindle, plays volleyball, and follows his gourmet-chef wife and charming daughter around the kitchen to wash the dishes.



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### Robert J. McQueeney

#### Ames Laboratory

Rob McQueeney is a Professor of Physics and Astronomy at Iowa State University and a Senior Physicist at the Ames Laboratory (USDOE). He has over 20 years of experience in condensed matter physics research using neutron and x-ray scattering techniques and in the operation and management of large-scale neutron and x-ray scattering facilities and instrumentation. Rob is leader of the neutron and x-ray scattering group at the Ames Laboratory where his research focuses on the study of correlated electron systems, such as high-temperature superconductors, using neutron and x-ray scattering. Over the course of his scientific career, Rob has published over 120 peer-reviewed journal articles that have been collectively cited over 4000 times. He received the ISU Award for Mid-Career Achievement in Research in 2011 and was elected as a Fellow of the American Physical Society in 2010.

Rob graduated from the University of Connecticut in 1991 with dual B.S. degrees in physics and chemistry. He received his Ph. D. in physics from the University of Pennsylvania in 1996 with a dissertation on the subject of lattice vibrations in high-temperature superconductors. After two years of postdoctoral study at the Lujan Neutron Scattering Center at Los Alamos National Laboratory (LANL), he continued at the Lujan Center as a Technical Staff Member in 1998. An important scientific milestone was measurement of the phonon spectrum of delta-Plutonium, garnering the National Nuclear Security Administration Award for Excellence in Research in 2003.

Rob served as Deputy Associate Laboratory Director for Neutron Sciences at Oak Ridge National Laboratory (ORNL) from 2013 – 2015 where he was part of the team that managed the neutron sciences R&D portfolio at ORNL. This included operation of the Spallation Neutron Source (the world's most powerful pulsed neutron source), dedicated to the study of the structure and dynamics of quantum condensed matter, biology and soft matter, chemistry and engineered materials, and operation of the High Flux Isotope Reactor, an 85 megawatt research reactor dedicated to neutron scattering, materials irradiation, and isotope production.

Rob has also played a large role in the development of neutron and x-ray scattering as an advocate and consultant on an international level. Among other activities, Rob served as a member of the Executive Committee of the SNS' ARCS and HYSPEC Instrument Development Teams from 2001-2014 and currently serves on advisory committees for the Advanced Photon Source Upgrade Project, Chinese Spallation Neutron Source, and ANSTO Bragg Institute (Australia). From 2012-13, Rob served part-time as a Detailee in the USDOE-Basic Energy Sciences (BES) - Scientific User Facilities Division to assist with the management of the BES neutron scattering program.



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### Trent R. Northen

#### Lawrence Berkeley National Laboratory

Dr. Trent Northen is Interim Division Director of Environmental Genomics and Systems Biology at Lawrence Berkeley National Laboratory. Dr. Northen is also the Metabolomics Lead Scientist at the Joint Genome Institute, Staff Scientist at Berkeley Lab, Director of Biotechnology at ENIGMA SFA, Director of Array-Based Assays at the Joint BioEnergy Institute, and Adjunct Faculty at the School of Life Sciences at Arizona State University. Prior, he was a Chemist Research Scientist at Berkeley Lab and Associate Marketing Manager and Scientist and Process Engineer for the Clorox Company.

Additionally, Dr. Northen holds and has held numerous Advisory and Editorial Positions and has numerous awards and recognitions. He has more than 70 publications, 19 patents and patent applications, 4 textbooks and book chapters, and over 50 invited speaking engagements.

Dr. Northen earned his Ph.D. in Chemistry and Biochemistry at Arizona State University and B.S. in Chemical Engineering at the University of California, Santa Barbara. He also partook in the Berkeley Lab Leadership Development Program at the UC Berkeley Haas School of Business and did his Post-doctoral Fellowship at the Scripps Research Institute.

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### Daniel T. Schwartz

#### University of Washington

Dr. Daniel Schwartz is Director of the Clean Energy Institute and Boeing-Sutter Professor of Chemical Engineering at the University of Washington. Dan earned his Ph.D. in Chemical Engineering at U.C. Davis in 1989 and then did a postdoc at the Department of Energy's Lawrence Berkeley National Laboratory. Dan joined UW in 1991. His UW research team is focused on a wide range of electrochemical engineering challenges, from new approaches for characterizing fuel cells and batteries, to novel electrochemical materials and additive manufacturing methods. He has also spent a decade partnering with Pacific Northwest Native American communities on a wide range of clean energy research, development, and educational activities. In recent years, Dan has been recognized as an ECS Fellow, ECS Linford Awardee, ECS Electrodeposition Division Research Awardee, as well the UW Marsha Landolt Distinguished Graduate Mentor.

## Energy Sciences Leadership Group 2016-2017



### Daniel B. Sinars

#### Sandia National Laboratories

Dr. Daniel Sinars is the Senior Manager for the Radiation and Fusion Physics Group at Sandia National Laboratories. He is responsible for leading and coordinating Sandia's research activities on Primary and Secondary Assessment Technologies as well as the Inertial Confinement Fusion campaign. This research is primarily centered around experiments on the 80-TW, 20 MJ Z pulsed power facility, and his group includes the operation of the multi-kJ, 2-TW Z-Beamlet laser facility.

Dan joined Sandia in 2001 after receiving a PhD in Applied Physics from Cornell University, and a B.S. in Engineering Physics from the University of Oklahoma in 1996. He has made extensive contributions to inertial confinement fusion, high energy density science, and z-pinch physics research, with over 110 refereed journal publications in these fields (24 as first author). He was the principal experimenter for over 160 experiments on the Sandia "Z" pulsed power facility, and led numerous additional experiments on the Z-Beamlet laser and the SATURN pulsed power facility. He led the development of numerous x-ray and spectroscopy diagnostics for the Z facility, including monochromatic x-ray backlighting, which has been the primary radiographic technique for the facility. Daniel's contributions were recognized in 2007 with an IEEE Nuclear and Plasma Sciences Society Early Achievement Award, and in 2011 with both a Department of Energy Early Career Research Program Award and the Presidential Early Career Award for Scientists and Engineers (PECASE). He was elected as a Fellow of the American Physical Society in September 2015.

## Energy Sciences Leadership Group 2016-2017



**Dawn M. Wellman**

**Pacific Northwest National Laboratory**

Dr. Dawn Wellman is a staff scientist, program manager, and the manager of the Environmental Health and Remediation (EH&R) market sector at Pacific Northwest National Laboratory. Dr. Wellman holds a Ph.D. in chemistry from Washington State University. Her scientific expertise is in understanding and predicting contaminant transport pathways and kinetics, aqueous and mineral surface geochemistry, and reaction kinetics for environmental remediation. She builds upon this fundamental understanding to develop and implement systems-based approaches for characterizing, monitoring, and remediating contaminated groundwater and soil at sites throughout the Department of Energy, as well as internationally, supporting site contractors and site owners.

In 2009, Dr. Wellman served as the Chief Scientist for the Office of Technology Innovation and Development for Groundwater and Soil Remediation at the Department of Energy Headquarters Office for Environmental Management. In this position, she resolved technical issues and assessed technology readiness for challenges in groundwater and soil remediation.

Currently, Dr. Wellman is manager of PNNL's EH&R sector within the Energy and Environment Directorate. EH&R develops and delivers science-based and risk-informed solutions, providing scientific foundations to enable critical cleanup decisions associated with prior waste generation activities and the impacts of contaminants in the environment. EH&R integrates fundamental science-based understanding with applied research to deliver systems-based solutions. The approaches used enable predictive understanding of system performance for managing and monitoring residual DOE tank waste, waste processing, immobilization and disposal, environmental remediation, restoration, and stewardship. Equally important, EH&R facilitates interactions with stakeholders, regulators, and the public by providing scientific and technical understanding to provide solutions and inform the risks, liabilities, and economics of complex cleanup challenges as the Nation strives to achieve environmental protection. Dr. Wellman leads the EH&R sector in demonstrating how PNNL's unique subsurface science, nuclear waste processing, and environmental capabilities can deliver impactful solutions for our clients.

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### Mike Willardson, J.D.

#### Stanford University, SLAC National Accelerator Laboratory

Mike Willardson is currently the Technology Transfer Chief for SLAC National Accelerator Laboratory. At SLAC, Mike manages the research partnerships and technology commercialization functions, which includes managing all aspects of strategic partnership agreements and cooperative research and development agreements, as well as managing the sponsored research function in partnership with Stanford University. Mike's current role requires establishing and facilitating interactions between SLAC, the Department of Energy, Stanford University and industry partners. In his role, he has formed and maintains key relationships with SLAC internal stakeholders including the lab director's office, science directorates and business units, DOE stakeholders including site office personnel, DOE HQ and DOE assistant general counsel's office, and Stanford's Dean of Research and industry licensing department. Mike is a member of the DOE Technology Transfer Working Group (TTWG), the National Lab Director's Counsel (NLDC) technology transfer subgroup and the DOE/Lab cross functional Strategic Partnerships Program (SPP) Community of Practice, and also serves on various subcommittees within these groups.

Mike began his professional career as a mechanical engineer with Intel Corporation. After 4 years as an engineer, Mike attended law school and moved into private practice, where he was a member of a small IP firm for 4 years. Mike moved into an in-house role managing all aspects of intellectual property for various private sector technology companies in areas including integrated circuits, software and consumer products. Immediately prior to joining SLAC, Mike was the Director of Legal and IP for NuScale Power, a nuclear technology company formed as a spinout from a DOE-funded university research project at Oregon State University. Mike had a broad area of responsibilities at NuScale including management of the entire legal and compliance function and management of the IP portfolio. While at NuScale, Mike worked closely with many national labs and negotiated a significant cooperative cost-sharing agreement with DOE Office of Nuclear Energy.

## Energy Sciences Leadership Group 2016-2017



### Howard Y. Yuh

#### Nova Photonics/Princeton Plasma Physics Lab

Dr. Howard Yuh is a research physicist working on fusion energy at the Princeton Plasma Physics Lab (PPPL). His physics research is currently focused on the National Spherical Torus eXperiment – Upgrade (NSTX-U), a DoE user facility evaluating the attractiveness of the spherical torus as a fusion reactor.

He is also part of the team developing and designing a current profile diagnostic for the international ITER tokamak project in Cadarache, France.

Howard's specific field of expertise is an instrument measuring internal magnetic field angles inside a thermonuclear plasma called the motional Stark effect (MSE) diagnostic, which is currently installed and in use on NSTX-U. Using data from this instrument, one can more accurately calculate the magnetic topology of the plasma and study its effect on plasma confinement, stability, and turbulence. As this measurement is very important for understanding plasma performance, the MSE diagnostic is one of several U.S. in-kind contributions to the ITER tokamak project. To aid in the design of the instrument, Howard constructed a 3D virtual instrument in software to simulate optical performance, geometry, and measurement sensitivities. Results from these simulations were used to allow the instrument to pass its conceptual design review in 2013, with detailed design work now underway.

More recently, Howard became a member of a newly formed socioeconomic group at PPPL, with the goal of understanding the future roadmap of energy technologies. In particular, the group analyzed risks with large scale deployment. Through his participation in this group, Howard had focused on global bioenergy and renewables. Howard's experience in the group has greatly increased his facility to zoom out from plasma physics all the way to global energy-water-food nexus issues. The daunting, multifaceted, and interconnected nature of climate change coupled with resource scarcity is pushing Howard to increase his engagement with this seemingly overwhelming problem. He believes that future policies must be guided by increasingly detailed models to avoid a myriad of unintended consequences.

Howard's background is in fusion energy, nuclear engineering, and materials science. He has a natural ease for understanding many aspects of technology and a passion for sustainable energy and resources for a growing world. He believes that technological advance is a crucial component to ensure a peaceful and thriving global population. Through his travels around the world, Howard has gained an appreciation for his rare privilege of education and research opportunities in the US, and therefore feels a personal responsibility to advance technology for the betterment of all.

Dr. Yuh earned a Ph.D. in Nuclear Engineering at the Massachusetts Institute of Technology and B.S. degrees in Material Science and Engineering as well as Nuclear Engineering at the University of California at Berkeley.

## Energy Sciences Leadership Group Mentors



### Michael Knotek

Dr. Michael Knotek was the Deputy Undersecretary for Science and Energy at the Department of Energy (US/S&E) from 2013 to 2015. For DOE to have the ability to closely integrate and move quickly among basic science, applied research, technology demonstration, and deployment, the US/S&E manages the programs and laboratories of the Office of Science (SC), and the programs and laboratories respectively of DOE's energy technology portfolio in The Offices of Fossil Energy (FE), Energy Efficiency and Renewable Energy (EERE), Nuclear Energy (NE), as well as the Offices of Electricity Delivery and Energy Reliability (OE), Indian Energy (IE), and of Technology Transfer Coordinator. This office provides the framework for the feedback among the various elements to facilitate implementation of the President's Climate-Action-Plan and All-of-the-above national energy strategy and the nation's general science and energy goals.

Dr. Knotek, a physicist, has more than 50 years of research and management experience within the Energy Enterprise. From 2010 to 2013 he was Director of the Renewable and Sustainable Energy Institute at the University of Colorado. He has extensive research, management and consulting experience with Sandia, Brookhaven, Pacific Northwest, Argonne, Oak Ridge, Los Alamos, Idaho, Lawrence Berkeley, and Ames National Laboratories and the National Renewable Energy Laboratory. During this career he has led DOE wide program formulation activities in Synchrotron Science and Facilities, Environmental Science, Fusion Sciences, High Performance Computation, and post-genomic Biology. In addition to senior Lab Management positions he previously served as senior science and technology adviser to the U.S. Secretary of Energy and was chief technology officer with the Battelle Memorial Institute. Knotek was a private consultant from 2001 through 2010, working with a wide range of Laboratories, DOE program offices, and other national Science and Technology concerns across a wide swath of renewable, fossil, and nuclear energy science and technology. He is widely published as scientist and is a fellow of the American Association for the Advancement of Science and the American Physical Society.



## Energy Sciences Leadership Group 2016-2017



### **William J. Madia**

#### **Stanford University**

Dr. Madia is currently Chairman of the Board of Overseers and Vice President for the SLAC National Accelerator Laboratory at Stanford University. Bill retired from Battelle Memorial Institute in 2007 after a 33-year career. His last position at Battelle was Executive Vice President for Mergers and Acquisitions.

Prior to that, he was responsible for Battelle's \$4 Billion, 15,000 person Laboratory Operations business, including the management or co-management of six Department of Energy national labs: Pacific Northwest, Brookhaven, the National Renewable Energy Laboratory, Oak Ridge, Idaho National Laboratory and Lawrence Livermore National Laboratories. In this role, he managed more than \$900 million of energy research and development in such areas as clean coal technology, renewable energy and energy efficient technologies, next generation nuclear reactor development, and improved energy transmission. This portfolio also included major programs focused on global climate change and carbon sequestration. Previously, Bill served as Director of the Oak Ridge and Pacific Northwest National Laboratories. Bill has also managed Battelle's global environmental business and served as president of Battelle Technology International. Throughout his career, Bill has successfully focused on commercializing a vast array of energy and power technologies.

He currently is a member of the Board of Directors of Centrus (LEU: NYSE), Chair of the Technology and Competition Committee, Chicago Bridge and Iron Federal Services, and a member of the MIT Visiting Committee for Nuclear Science and Engineering.

Dr. Madia has received the Secretary of Energy's Gold Award, the Energy Department's highest honorary award; the DOE Distinguished Associate Award; he was nominated for the National Medal of Technology; and named "Laboratory Director of the Year" in 1999 by the Federal Laboratory Consortium.

Dr. Madia received a Bachelors and Masters of Science in Chemistry from the Indiana University of Pennsylvania and a Ph.D. in Chemistry from Virginia Polytechnic Institute.

## Energy Sciences Leadership Group 2016-2017



### Charles V. Shank

#### Howard Hughes Medical Institute

Charles V. Shank earned a BS in 1965 and a PhD in 1969, both from the University of California at Berkeley. Following graduation, he joined Bell Laboratories where his passion to explore events occurring in a millionth of a billionth of a second (femtosecond) was ignited. He was a pioneer in developing ultrafast lasers and measurement techniques, which opened the door to investigations in the world of ultrafast events. Ultrafast events take place on a femtosecond time scale are important in chemistry, physics and biology. While at Bell Labs he was Director of the Electronics Research Laboratory.

In 1989, Dr. Shank returned to the University of California as Director of the Lawrence Berkeley National Laboratory and Professor in three departments, Chemistry, Physics and Electrical Engineering and Computer Science. As Laboratory Director, he energetically led the launch of the DOE Joint Genome Institute (JGI), which successfully decoded three human chromosomes; facilitated the creation of the National Energy Research Scientific Computing Center (NERSC), an Office of Science national user facility supercomputing center; fostered pioneering new science at the Advanced Light Source (ALS); and initiated the formation of Molecular Foundry, an Office of Science nanoscience national user facility.

Since stepping down as LBNL laboratory director in 2004, Dr. Shank has pursued numerous scientific activities as a Senior Fellow at the HHMI Janelia Farm Campus and as leader of several National Academy of Sciences studies. He was appointed Co-Chair of the NRC study to “Review the Quality of Management and of the Science and Engineering Research at DOE National Security Laboratories”, and he testified before Congress on the findings in 2014. In addition, he has served on the boards of several DOE laboratories and been involved in international scientific reviews and projects.

## Energy Sciences Leadership Group 2016-2017



### William J. Wepfer

#### Georgia Institute of Technology

Dr. Wepfer has served as the Eugene C. Gwaltney, Jr. School Chair of the George W. Woodruff School of Mechanical Engineering at Georgia Tech since January 2008. The Woodruff School is the oldest and the largest Georgia Tech academic unit by enrollment and is the largest mechanical engineering program in the US. The Woodruff School has ninety-eight tenure track and eight non-tenured faculty members. The School's undergraduate mechanical program is ranked 5th, its graduate ME program is ranked 6th, and its graduate NRE program is ranked 8th by U.S. News & World Report.

Dr. Wepfer's research interests are in thermal systems, heat transfer, and thermodynamics. His research centers on energy systems to include hybrid combustion-turbine fuel cell systems and combined heat-power systems. Wepfer has also done extensive research in the area of heat and mass transfer phenomena in textile materials.

Dr. Wepfer is a member of the Executive Committee of the Engineering Accreditation Commission of ABET and served as Chair of the EAC during the current 2014-15 accreditation cycle. Dr. Wepfer served as ASME's Vice-President of Education from 2010-12, as Senior Vice-President for Public Affairs & Outreach Sector from 2013-15, and currently serves on the ASME Board of Governors.