

Six ORNL scientists elected fellows of American Association for the Advancement of Science

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Six ORNL scientists have been elected as fellows to the American Association for the Advancement of Science, or AAAS. Credit: ORNL, U.S. Dept. of Energy

Six scientists at the Department of Energy's Oak Ridge National Laboratory have been elected as fellows to the American Association for the Advancement of Science, or AAAS.

The society is the world's largest multidisciplinary scientific body and a leading publisher of cutting-edge research through the *Science* family of journals. Since 1874, AAAS fellows represent extraordinary achievement across disciplines and a commitment to communicating science to the public.

ORNL's new AAAS fellows include:

Forrest Hoffman, group leader for Computational Earth Sciences in the Computational Sciences and Engineering Division, theme lead for Earth System Modeling in the Climate Change Science Institute and principal investigator for DOE's multi-institutional RUBISCO Science Focus Area. Hoffman develops and implements metrics for Earth system model

evaluation, performs software engineering for models at scale on high performance computing architectures, and develops and applies machine learning methods for large scale Earth and environmental systems data analytics. Hoffman is being honored for distinction in developing, comparing and evaluating Earth system models with an emphasis on global biogeochemical cycles and feedbacks to the climate system.

Michael McGuire, a scientist in the Correlated Electron Materials Group in the Materials Science and Technology Division. He is an experimentalist working at the intersection of solid-state chemistry and condensed matter physics, using materials synthesis, crystallographic studies and physical property measurements to explore structure-property relationships in complex materials. McGuire is being honored for distinguished contributions to materials physics, particularly the use of crystal growth and solid-state chemistry to discover and study thermoelectric, superconducting, magnetic and two-dimensional materials.

Thomas Proffen, scientist in the Powder Diffraction Group in the Neutron Scattering Division. He also directs the High Performance Computing and Data Analytics Science Initiative, which applies developments in computing, machine learning and data analytics to neutron scattering data. He is an active volunteer for STEM education activities, including Hour of Code and a nonprofit he founded, Oak Ridge Computer Science Girls. In 2018, he received the Tennessee Governor's Volunteer Star Award for these efforts. Proffen is being honored for his contribution to the development of techniques to determine the local structure of materials and his leadership in promoting scientific excitement among young people.

Jeffrey Vetter, head of the Advanced Computing Systems Research Section in the Computer Science and Mathematics Division. Vetter's research career is focused on developing rich architectures and software systems that solve important, real-world high-performance computing problems. He has been investigating the effectiveness of next-generation architectures, such as non-volatile memory systems, massively multithreaded processors and heterogeneous processors such as graphics processors and field-programmable gate arrays for key applications. Vetter is being honored for leadership, innovation and distinguished contributions to high-performance computing, particularly to extreme-scale heterogeneous architectures and programming systems.

Larry Satkowiak, director of the Nonproliferation Program Office, or NPO, in the Nuclear Nonproliferation Division. In his role, he oversees NPO in the development and coordination of and assistance in implementing domestic and international policy aimed at reducing threats to the United States from weapons of mass destruction. NPO's primary focus is to reduce the proliferation of nuclear materials, nuclear weapons and radiological dispersal devices. Satkowiak is being honored for distinguished contributions to verification and security for nuclear and radiological material, which have helped protect the world from nuclear terrorism.

Gina Tourassi, director of the National Center for Computational Sciences. Tourassi's research background and interests are in artificial intelligence, scalable data-driven biomedical discovery, high-performance computing, clinical decision support and human-computer interaction. Her scholarly work includes more than 250 peer-reviewed journal articles, conference proceedings articles, book chapters and editorials, as well as 15 invention disclosures and patents. She is an elected fellow of the American Association of Physicists in Medicine, the International Society for Optics and Photonics and the American Institute for Medical and Biological Engineering. Tourassi is being honored for distinguished contribution in biomedical informatics, particularly using artificial intelligence for diagnostic interpretation of medical images and clinical natural language processing.

New fellows will be recognized during the AAAS Annual Meeting, which will be held virtually Feb. 8-11.