Laurencin to present Kavli lecture during 2016 MRS Spring Meeting plenary session

Cato T. Laurencin of the University of Connecticut has been selected to present the Fred Kavli Distinguished Lectureship in Materials Science during the 2016 Materials Research Society (MRS) Spring Meeting to be held March 28–April 1 in Phoenix, Ariz. He is the Albert and Wilda Van Dusen Distinguished Endowed Professor of Orthopaedic Surgery, professor of Chemical and Biomolecular Engineering, professor of Materials Science and Engineering, and professor of Biomedical Engineering at the University of Connecticut.

Laurencin's presentation is titled "Regenerative Engineering—Convergence Built upon Materials Science." Regenerative engineering is defined as a convergence of advanced materials science, stem cell science, physics, developmental biology, and clinical translation. Biomaterials play a centrally important role.

Work in the area of musculoskeletal tissue regeneration has focused on a number of biomaterial technologies. Polymeric nanofiber systems create the prospect for biomimetics that recapitulate connective tissue ultrastructure allowing for the design of biomechanically functional matrices, or next-generation matrices that create a niche for stem cell activity. Polymer and polymer-ceramic systems can be utilized for the regeneration of bone. Through the use of inducerons, small molecules fostering induction, the design of regeneration-inducing materials can be realized. Hybrid matrices possessing micro- and nano-architecture can create advantageous systems for regeneration, while the use of classic principles of materials science and engineering can lead to the development of three-dimensional systems suitable for functional regeneration of tissues of the knee.

Laurencin earned his BSE degree in chemical engineering from Princeton University and his MD degree from Harvard Medical School. He simultaneously earned his PhD degree in biochemical engineering/biotechnology from the Massachusetts Institute of Technology. Laurencin's research focuses on regenerative engineering, biomaterials, nano-technology, drug delivery, and stem cell science. He received the PIONEER Award from the National Institutes of Health, and two Emerging Frontiers in Research and Innovation (EFRI) Awards from the National Science Foundation for his work in regenerative engineering. In 2012, *National Geographic* Magazine highlighted his work on regenerating tissues in its "100 Discoveries That Have Changed Our World" edition.

Laurencin is a Fellow of MRS, the American Chemical Society, and an International Fellow in Biomaterials Science and Engineering. He is a member of the editorial boards of 20 journals, and is the editor-in-chief of *Regenerative Engineering and Translational Medicine*.

De Jonge, Ross, and Wang to receive MRS Innovation in Materials Characterization Award

Niels de Jonge, INM–Leibniz Institute for New Materials; Frances M. Ross, IBM T.J. Watson Research Center; and Chongmin Wang, Pacific Northwest National Laboratory are being honored with the Materials Research Society (MRS) Innovation in Materials Characterization Award "for seminal contributions to the imaging of specimens in liquids using transmission electron microscopy, revolutionizing the direct observation of materials processes, batteries during operation, and biological structures." They will be presented with the award at the 2016 MRS Spring Meeting in Phoenix, Ariz. The award is endowed by Toh-Ming Lu and Gwo-Ching Wang.

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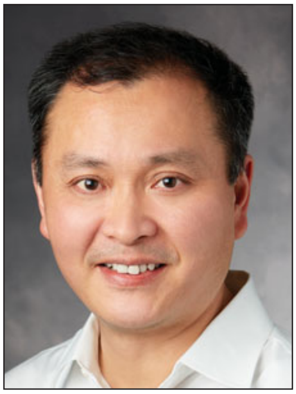
Each recipient has made seminal contributions to the imaging of liquids in the transmission electron microscope (TEM). Together, they have revolutionized experimental techniques for the observation of liquid-based samples and processes for the understanding of material fabrication, electrochemical cell functionality, and biological cells in their native environment.

The work of Ross, Wang, and de Jonge has allowed both open and closed cell liquid microscopy to be realized. Their practical implementations of techniques for imaging liquids in the TEM has created a new area of opportunity for others. The ability to achieve high spatial and temporal resolution when studying processes in liquids has provided unique insight into electrochemical deposition, corrosion, battery operation, and solution-phase particle synthesis, while imaging biological materials in their native environment has provided new information on whole cell structure, viruses, and macromolecular assemblies.

De Jonge is a senior group leader in innovative electron microscopy at the INM–Leibniz Institute for New Materials, Saarbrücken, Germany. He is also Honorary Professor of Experimental Physics at Saarland University, Saarbrücken, Germany. He received his PhD degree in natural sciences (with a specialization in biophysics) from the Faculty of Biology, University of Freiburg, Germany. He also earned a master's degree in experimental physics from the University of Amsterdam, The Netherlands. His research focuses on the development and application of electron microscopy of specimens in liquid, with an emphasis on biophysics and biomedical sciences. He was awarded the Innovation Award of Oak Ridge National Laboratory in 2007, and the Esprit de Corps community service category award at Oak Ridge National Laboratory in 2008. He has published 60 peer-reviewed journal articles, 18 book chapters, and presented 73 invited lectures.

Ross received her BA degree in physics and a PhD degree in materials science from the University of Cambridge, UK. Her postdoc was at AT&T Bell Laboratories, using *in situ* electron microscopy to study the oxidation of Si and dislocations in SiGe. She later joined IBM, building a program around a TEM equipped with *in situ* chemical vapor deposition, evaporation, and focused ion-beam capabilities and a UHV mass-filtered FIB/STM system. She has been a visiting scientist at Lund University and an adjunct professor at Arizona State University. She received the UK Institute of Physics Charles Vernon Boys Medal, the MRS Outstanding Young Investigator Award, and the MSA Burton Medal and holds an honorary doctorate from Lund University. She is a Fellow of APS, AAAS, MRS, MSA, and AVS. She is a co-author of more than 130 journal articles and 7 patents, and has given more than 100 invited and plenary conference talks.

Wang is a staff scientist in the Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory. He received his BSc and MSc degrees in physics from Lanzhou University in China and his PhD degree in materials science and engineering from the University of Leeds, UK. He was the recipient of the Microscopy Today Innovation Award (2012), the R&D 100 Award (2012), the Rowland Snow Award from The American Ceramic Society (1999), the PNNL Exceptional Contribution Award (2003, 2007), the PNNL Pathway to Excellence Award (2013), and the Outstanding Invention Award from the Japanese Science and Education Committee (2001). His research interests focus on the application of state-of-the-art S/TEM and spectroscopy techniques to materials characterization at high spatial resolution, especially *in situ* TEM techniques for energy materials. He has published 280 journal articles, authored 7 book chapters, and has given more than 50 invited and plenary conference talks.



Dai to receive Mid-Career Researcher Award for contributions to carbon-based nanoscience

The Materials Research Society (MRS) has named Hongjie Dai, professor of chemistry at Stanford University, to receive the Mid-Career Researcher Award "for seminal contributions to carbon-based nanoscience and applications in nanoelectronics, renewable energy, and biological systems." Dai will be recognized during the Award Ceremony at the 2016 MRS Spring Meeting in Phoenix, Ariz. The Mid-Career Research Award, endowed by Aldrich Materials Science, recognizes exceptional achievements in materials research made by mid-career researchers.

Dai pioneered the controlled growth of carbon nanotubes using metal-catalyzed chemical vapor deposition. This work showed for the first time that high-quality single-walled nanotubes could be synthesized using a method that enables control over the growth process. In addition, he used his knowledge of nanotube growth to demonstrate hierarchical organization over multiple length scales.

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