the cell–biomaterial interface. Her seminal work on the mechanisms of how extracellular cues are transmitted through cells and her innovative approaches for biomolecule presentation have revolutionized the field. Anseth is widely recognized for blending modern molecular and cellular biology with engineering and quantitative methods to generate the next generation of biomaterials for cell culture, delivery, and tissue regeneration.

Most recently, Anseth has focused on creating new biofunctionalized hydrogel materials using click chemistry. She has applied novel hydrogels to engineer stem-cell differentiation, craniofacial regeneration, pancreatic cell encapsulation, modulation of inflammation, protein delivery, and heart valve repair. She has demonstrated how photodegradable gels that allow real-time manipulation of materials properties or chemistry can provide dynamic environments to answer fundamental questions about materials regulation of live cell function. This ability can affect an array of applications from design of drug delivery vehicles to tissue engineering systems.

Anseth's contributions have been translated into a number of medical products, and she has started two startup companies on biomaterials and tissue engineering.

Following her research fellowship at the Massachusetts Institute of Technology, Anseth joined the University of Colorado in 1996. Among her many honors are election to the National Academy of Engineering and to the Institute of Medicine of the National Academies, selection as the first engineer to become a Howard Hughes Investigator, and recognition by the American Institute of Chemical Engineers as "one of the 100 engineers of the modern era." Anseth is a Fellow of MRS, she received the MRS Outstanding Young Investigator award, and she has served the Society as a member of the Board of Directors, chair of the Planning Committee, and co-chair of the 2009 MRS Fall Meeting. She received her PhD degree from the University of Colorado in 1994. She holds 17 patents and has published over 220 papers.

Markus J. Buehler named 2012 MRS Outstanding Young Investigator for computational modeling

Markus J. Buehler, associate professor at the Massachusetts Institute of Technology (MIT), has been named the 2012 Materials Research Society Outstanding Young Investigator. Buehler was cited for "highly innovative and creative work in computational modeling of biological, bio-inspired and synthetic materials, revealing how weakness is turned into strength through hierarchical material design." He will deliver an award talk at the 2012 Materials Research Society Spring Meeting in San Francisco.

Buehler has made profound contributions by bridging disciplines to explain the mechanical properties of structural biological materials in both normal physiological and disease states using an innovative bottom-up approach that combines simulation with experiment. Through research rooted in atomistic-level multiscale models of materials, Buehler has identified the core principles that link the fundamental atomistic-scale chemical structures to functional, engineering scales by understanding how biological materials achieve superior mechanical properties through the formation of hierarchical structures by merging structure and material concepts. He has demonstrated that the way components are connected at distinct scales defines what functional materials properties can be achieved, how they can be altered to meet functional requirements, and how they fail in disease states and under extreme conditions.

Moreover, Buehler's work is extradisciplinary. For example, he discovered through an application of category theory that a striking similarity exists between the structure and function of protein materials, music, language, and social networks, by identifying universal principles of generating heightened functionality despite intrinsic limitations of building blocks. He uses computational methods to shed light on key questions that cannot be addressed through experiments due to lack of resolution, condition control, or other limitations.

By focusing on the link between the atomistic, the meso-, and the macroscale, his work has furthered the understanding of the mechanisms of injury and disease by probing how structural changes (e.g., genetic mutations and other molecular defects) alter materials properties, and by providing a materials science foundation to disease mechanisms (e.g., brittle bone disease). His approach enables the investigation of different biological and synthetic materials with the same technique and without reliance on empirical efforts.

Buehler received his Dr. rer. nat. (PhD equivalent) degree in 2004 from the Max Planck Institute for Metals Research at the University of Stuttgart, Germany, and joined MIT in 2005 after a postdoctoral scholarship at the California Institute of Technology. Since 2010, he has been serving as director of the MIT-Germany Program and as group leader of the Mechanics and Materials Division in Civil and Environmental

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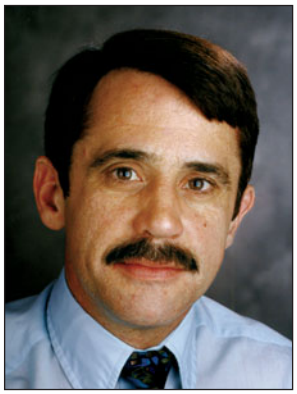
Engineering at MIT. Since 2011, he has been serving as co-director of the MIT Computation for Design and Optimization Program. In 2004, Buehler received the MRS Graduate Student Gold Award. In 2011, he received numerous honors, including the Thomas J.R. Hughes Young Investigator Award, the Alfred Noble Prize, and the Leonardo Da Vinci Award. Buehler serves as editor or on the editorial board of numerous publications. He serves MRS in a number of capacities, including judge and chair of the MRS Graduate Student Award subcommittee, as a volunteer writer for *MRS Bulletin*, and as a lead organizer of several symposia at MRS Meetings.

John Pendry to give plenary address on metamaterials at 2012 MRS Spring Meeting

John Pendry of Imperial College London will give the plenary address at the 2012 Materials Research Society Spring Meeting to be held April 9–13 in San Francisco. The plenary session will be held Wednesday, April 11, at 6:30 p.m. in the San Francisco Marriott Marquis.

In his presentation, Pendry will describe recent developments and future prospects in the area of metamaterials. The properties of a metamaterial depend on its interatomic structure rather than on the composition of the atoms themselves. In collaboration with a team of scientists at Duke University, Pendry has developed the concept of "transformation optics," which prescribes how electromagnetic lines of force can be manipulated at will. This enabled a proposed recipe for a cloak that can hide an arbitrary object from electromagnetic fields, and has also many applications at optical frequencies to the study of plasmonic systems.

At the Imperial College London, Pendry has been head of the Condensed Matter Theory Group since 1981. He began his career in the Cavendish Laboratory, Cambridge, followed by six years at the Daresbury Laboratory where he headed the theoretical group. Among his honors are the Royal Medal from the Royal Society of London and the European Union's Descartes Prize. Pendry received his PhD degree from the University of Cambridge.



Thomas P. Russell to present Kavli lecture on nanoscience at 2012 MRS Spring Meeting

Thomas P. Russell, the Silvio O. Conte Distinguished Professor of Polymer Science and Engineering at the University of Massachusetts, Amherst, has been selected for the Fred Kavli Distinguished Lectureship in Nanoscience. He will give a presentation at the 2012 Materials Research Society Spring Meeting to be held April 9–13 in San Francisco. The award recognizes both his pioneering research on polymer/nanoparticle composites and block copolymer thin films and his service to the materials community.

Russell has pioneered the analysis of polymeric thin films and the interfacial behavior of polymers and nanoparticles by neutron scattering and hard and soft small-angle x-ray scattering and diffraction. He has also focused on understanding and improving nanopatterning through self-assembly in block copolymer thin films. His achievements in the vertical alignment of block copolymer microdomains and large-area homogeneous nanopatterns are major milestones in block copolymer self-assembly.

Among Russell's honors is election to the National Academy of Engineering, and he is a fellow of the American Physical Society, the American Association for the Advancement of Science, the Neutron Scattering Society of America, the Polymer Division in the American Chemical Society, and the Materials Research Society. He also served on the MRS Board of Directors. Russell received his PhD degree from the University of Massachusetts, Amherst.

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