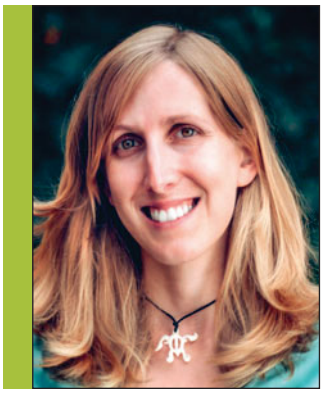

Dionne named 2017 MRS Outstanding Young Investigator for innovative new materials and methods

Jennifer A. Dionne, associate professor of materials science and engineering at Stanford University, has been named a 2017 Materials Research Society (MRS) Outstanding Young Investigator. Dionne was cited "for innovating new materials and methods to visualize and control nanometer-scale optical, electronic, and chemical processes *in situ*." She will be presented with the award at the 2017 MRS Spring Meeting in Phoenix, Ariz.

Dionne's presentation will describe new techniques that enable *in situ* visualization of chemical transformations and light–matter interactions with nanometer-scale resolution. In particular, she will focus on (1) ion-induced phase transitions; (2) optical forces on enantiomers; and (3) nanomechanical forces using unique electron, atomic, and optical microscopies. First, she will explore nanomaterial phase transitions induced by solute intercalation to understand and improve materials for energy-storage applications. Then, she will discuss optical tweezers that enable selective optical trapping of nanoscale enantiomers, with the ultimate goal of improving pharmaceutical and agrochemical efficacy. Finally, she will present new nanomaterials for efficient and force-sensitive upconversion. These optical force probes exhibit reversible changes in their emitted color with applied nano- to micro-Newton forces.

Dionne received her PhD degree in applied physics at the California Institute of Technology and BS degrees in physics and systems and electrical engineering from Washington University in St. Louis. Prior to joining Stanford, she was a postdoctoral researcher in chemistry at UC Berkeley.

Dionne's group develops new nano and optical materials for applications ranging from high-efficiency energy conversion and storage to bioimaging and manipulation. This has led to the demonstration of negative refraction at visible wavelengths, design of optical tweezers for nano-specimen trapping, demonstration of a metamaterial fluid, and synthesis of high-efficiency and active upconverting materials. Most recently, she has developed *in situ* techniques to visualize chemical transformations and light–matter interactions with nanometer-scale spatial resolution.

Dionne is the recipient of the Adolph Lomb Medal, Sloan Foundation Fellowship, the Presidential Early Career Award for Scientists and Engineers, and the inaugural Kavli Early Career Lectureship in Nanoscience, and was recently featured on Oprah's list of "50 Things that will make you say 'Wow'!" She is a recipient of the National Science Foundation CAREER Award, the Air Force Office of Scientific Research Young Investigator Award, and TR-35 (*MIT Technology Review* "35 Innovators under 35").

Madsen to receive MRS Impact Award

Lynnette D. Madsen, National Science Foundation (NSF), will receive the inaugural Materials Research Society (MRS) Impact Award "in recognition of her effectiveness in exemplifying technical leadership, advancing diversity, fostering mentoring and communicating persuasively to influence both large and small institutions." This award honors outstanding individuals who have displayed excellence in science communication, education, advancing diversity, mentoring, or community engagement, which reflect the Society's pursuit to advance materials science and technology to improve the quality of life.

Madsen has worked at NSF as a program director in materials research since 2000. Additionally, she has completed three detail assignments at NSF dealing with international efforts with Africa, increasing the advancement of women in academic careers, and strategic human capital analysis and planning. She has led new co-operative activities with European researchers in materials; has been part of the driving force in program development and initiatives in nanotechnology, manufacturing, and sustainability; and has maintained an active independent research program.