THE MATERIALS SCIENCE AND ENGINEERING DEPARTMENT
SPRING COLLOQUIUM SERIES PRESENTS:

Julia A. Mundy

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Design and Construction of Multifunctional Oxide Heterostructures

Transition metal oxides exhibit almost every physical state known including photoconductivity, metallic conductivity, (high-temperature) superconductivity, colossal magnetoresistance, ferroelectricity, and ferromagnetism. Combined with the ability to epitaxially integrate these materials with silicon, they are leading candidates for applications spanning from photocatalysts to data storage. Here I will show how thin film epitaxy can be used to selectively stabilize materials which are not stable in the bulk form. I will show our results combining atomically-precise thin film deposition with picoscale electron microscopy imaging to stabilize novel ground states in nickelate thin films.

Julia Mundy is an assistant professor in the Department of Physics at Harvard University. She received an AB/AM in Chemistry and Physics from Harvard University and her Ph.D. in Applied Physics from Cornell University. Following her Ph.D. studies, she spent a year at the US Department of Education as the APS/AIP STEM Education Fellow. After a postdoctoral fellowship at UC Berkeley, she returned to Harvard University where she began as an assistant professor in 2018. Prof. Mundy's research program combines atomically-precise oxide molecular-beam epitaxy with picoscale electron microscopy imaging to design, synthesize and probe new quantum materials.

Tuesday, June 1 • 4 PM CT • Zoom

Registration is required. RSVP link.

Questions? Contact Kristina.lugo@northwestern.edu.

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