



# MARCH 21, 2018

# MSE SYMPOSIUM

## Keynote Speaker

Dr. Chris Leighton

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## Complex Oxide Materials: From Minerals to Next Generation Electronics

High performance computers, advanced cell phones, high storage capacity iPods, and efficient lap-top computers, have become so ingrained in our daily lives that we take them for granted. It is now widely acknowledged, however, that the silicon-based technology that has fueled the extraordinary advancements in microelectronics that have made these devices possible lies at an unprecedented crossroads. Fundamental barriers to further progress loom for both computation and data storage, and it is not at all clear which technologies will be used to supplement or replace the existing ones. On the bright side, there are a multitude of new materials with the potential to play an important role in future electronic devices, and I will argue in this talk that it is thus a uniquely exciting time to be involved in the discovery, development, and understanding of new electronic and magnetic materials. I will focus on just one class of such materials in this talk, namely complex oxides. These oxides have been known for decades as naturally occurring minerals, but are now being studied in synthetic form in many research groups worldwide. I will discuss their appealing properties, some challenges to their use in devices, as well as promising recent developments in their utilization. The careful listener will discover surprising underlying connections between a Julia Roberts movie, the Russian mineralogist Lev Aleksevich von Perovski, the composition of the earth's lower mantle, publications that never get cited, defects that do useful things, and transistors made from Gatorade.

## MSE Symposium Schedule

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4-5PM

Keynote

Berry Center

Auditorium

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5-7PM

Poster Session

Enzi STEM Bldg  
Atrium

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Poster Prizes for  
Students!

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Food and  
Beverages

