

## MSE Cal Week (April 18 - 24, 2020)

Date	Time	Presenters	Zoom Links:
Saturday, 4/18/20	10:00am - 11:00am	Professor Chrzan & Professor Martin	<a href="https://berkeley.zoom.us/j/298058757">https://berkeley.zoom.us/j/298058757</a>
Saturday, 4/18/20	11:00am - 12:00pm	Faculty Panel	<a href="https://berkeley.zoom.us/j/426468252">https://berkeley.zoom.us/j/426468252</a>
Saturday, 4/18/20	12:00pm - 1:00pm	MSEA Student Panel	<a href="https://berkeley.zoom.us/j/975852368">https://berkeley.zoom.us/j/975852368</a>
Sunday, 4/19/20	1:00pm - 1:30pm	Professor Messersmith	<a href="https://berkeley.zoom.us/j/921626041">https://berkeley.zoom.us/j/921626041</a>
Monday, 4/20/20	10:00am - 10:30am	Professor Yao	<a href="https://berkeley.zoom.us/j/8084193358">https://berkeley.zoom.us/j/8084193358</a>
Tuesday, 4/21/20	10:00am - 10:30am	Professor Ramesh	<a href="https://berkeley.zoom.us/j/3509419100">https://berkeley.zoom.us/j/3509419100</a>
Wednesday, 4/22/20	10:00am - 10:30am	Professor Ager	<a href="https://lbnl.zoom.us/j/93029477515">https://lbnl.zoom.us/j/93029477515</a>
Friday, 4/24/20	1:00pm - 1:30pm	Professor Zheng	<a href="https://berkeley.zoom.us/j/8636578183">https://berkeley.zoom.us/j/8636578183</a>

***Professors Chrzan (Chair) and Martin (Vice Chair)***

### **The Department of Materials Science and Engineering: An Overview**

Aimed at prospective students, this talk will present a brief overview of the Department of Materials Science and Engineering, its past, present and future. You will learn about the academic program, research opportunities within the department, and career choices following graduation. This session will close with a 20 minute question and answer session.

***Faculty: Professor Ager, Professor Martin, Dr. Sherburne, Professor Al Balushi (tentatively)***

**Materials Science and Engineering Faculty Panel**

This panel, moderated by current students, will give you a chance to interact with faculty and ask any questions you have about coursework, research, or the department at large. You'll learn more about Berkeley MSE and the culture and community within the department.

## ***MSEA***

### **Materials Science and Engineering Association Student Panel**

MSE students from all years will be available to answer all your questions about Berkeley and the Materials Science and Engineering Department. What is materials science? What's life like as a Berkeley MSE student? What do materials scientists research? Where do materials scientists work? We'll go through all of these common questions (and more) in this session.

## ***Professor Messersmith***

### **“Materials Science of Personal Protection Against Coronavirus”**

The COVID-19 pandemic has put a spotlight on personal protective equipment (PPE) used by healthcare workers, their patients and the public. The extreme short supply of PPE, in particular N95 particle masks, is creating potentially dangerous conditions for frontline healthcare workers and their patients and creating a need for approaches to disinfect and reuse masks. The focus of this talk will be the N95 particle mask- how they work, the polymer materials that they are made of, decontamination strategies that have been proposed for N95 mask reuse, and what is known about the impact of these strategies on mask performance.

## ***Professor Yao***

### **“Bring the Invisible Cloak to Reality”**

Does Harry Potter's invisible cloak only exist in Hogwarts? What would it be like if we could make one in real life? Welcome to the world of optical materials.

## ***Professor Ramesh***

### **“It's a Materials World”**

The Department of Materials Science and Engineering, which has led the world of Materials Research for over 150 years, has made numerous contributions to the understanding of the wonderful world of materials, and in the process has contributed much to the economy of California, the nation and the world. This talk will explore some of the most recent contributions.

***Professor Ager***

**“New Materials For a Sustainable Energy Future”**

Since the industrial revolution, human activities have caused the atmospheric carbon dioxide concentration to rise, causing warming of the planet and changes in the weather. Learn how new materials are converting carbon dioxide into chemicals and fuels in processes which will provide a sustainable chemical and energy economy in the future.

***Professor Zheng***

**“Seeing Materials in the Real World Atom-by-Atom”**

Do you know how nanomaterials grow and function in the real-world? Issues with common understanding of the nano-world arise from the fact that structures and reactions happen at scales too small and fast to easily observe. In this talk, I will show our newest capability of real time imaging of materials in real-world environmental conditions (e.g., liquid, gas, heating or electric field.) with a powerful electron microscope, down to the level of individual atoms. I will also discuss how we can use this capability to solve real-world problems.