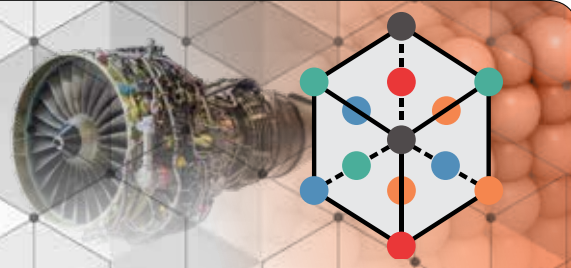


# HIGH ENTROPY ALLOYS: FUNDAMENTALS, ALLOY DESIGN, PROPERTIES, AND POTENTIAL APPLICATIONS



**November 5-7, 2024**

This course will include six, half-day, virtual modules. On-demand access through December 9.

Learn the fundamentals of developing high entropy alloys (HEAs) and gain insights into potential pathways to commercialization in this online course taught by some of the leading experts in this emerging field. Since their discovery less than 20 years ago, HEAs hold tremendous promise for enabling novel material properties that could address materials barriers and challenges in a variety of industries. Fast-track your exploration of this groundbreaking technology by attending this course and making connections with our world class instructors.

## WHAT YOU WILL LEARN

### MODULE 1:

#### History, Overview, and Fundamentals of HEAs

Explore the history of HEAs and an overview of some key fundamental principles and definitions associated with HEAs.

### MODULES 2 & 3:

#### Classes of HEAs and Alloy Design I & II

Consider the various classes and design considerations of HEAs, including refractory HEAs, 3D transition metal HEAs, HEA steels, HEA ceramics, and HEA functional materials.

### MODULES 4 & 5:

#### Properties I & II

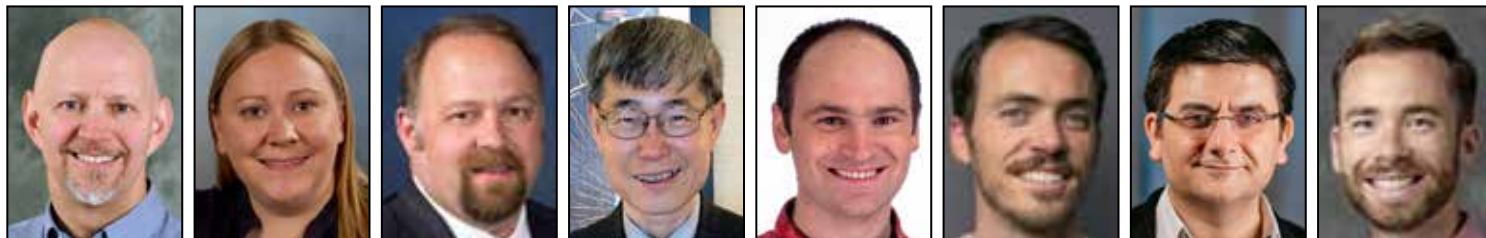
Examine the structural, mechanical, and functional properties of HEAs and potential future application domains.

### MODULE 6:

#### Computational Modelling and Machine Learning Approaches for HEAs

Review computational modeling and machine learning methods associated with predictive modeling of HEA processing, microstructures, and/or properties.

## LEARN FROM THE EXPERTS



Pictured left to right: **Daniel B. Miracle** (Lead Instructor), Air Force Research Laboratory; **Amy Clarke**, Los Alamos National Laboratory; **Kester Clarke**, Los Alamos National Laboratory; **Peter Liaw**, University of Tennessee; **Noah Philips**, ATI Metals; **Taylor Sparks**, University of Utah; **C. Cem Tesan**, Massachusetts Institute of Technology; and **Mike Titus**, Purdue University

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