

# VERIFICATION, VALIDATION, AND UNCERTAINTY QUANTIFICATION IN THE COMPUTATIONAL MODELING OF MATERIALS AND STRUCTURES

Applying Recommended Practices and Expert Techniques

August 20-22, 2024 · This course will include six, half-day, virtual modules, with supporting materials.

## COURSE MODULES

### MODULE 1:

#### How to Design and Implement Robust Verification and Validation Practices

This module will instruct attendees on why V&V is critical for computational modeling of materials and structures and how to design and implement V&V practices.

### MODULE 2:

#### Code and Solution Verification

This module will instruct attendees on how to carry out code and solution verification.

### MODULE 3:

#### Computational Uncertainty Quantification

This module will cover the quantification of uncertainty in computational models.

### MODULE 4:

#### Quantifying Experimental Uncertainties for Validation Assessments

This module will cover the quantification of uncertainty in experimental data.

### MODULE 5:

#### Designing Validation Experiments: Combining Modeler and Experimentalist Perspectives

This module will present a discussion of the preliminary calculations and design of validation experiments aspects of the *Verification & Validation in Computational Modeling of Materials and Structures* study.

### MODULE 6:

#### Regulatory Agency Perspectives, Examples and Lessons Learned

This module will give the perspective of the importance and utility of V&V and provide examples in certain commercial sectors from the point of view of different regulatory agencies.

## COURSE INSTRUCTORS

### LEAD INSTRUCTORS

(Pictured Left to Right)



- **Jacob Hochhalter**, University of Utah
- **David Moorcroft**, Federal Aviation Administration
- **Aaron Tallman**, Florida International University
- **Michael Tonks**, University of Florida
- **Brandon M. Wilson**, Los Alamos National Laboratory

### ADDITIONAL INSTRUCTORS

(Pictured Left to Right)



- **Kenneth Aycock**, US Food and Drug Administration
- **Zachary Harris**, University of Virginia
- **Joshua Kaizer**, U.S. Nuclear Regulatory Commission

Register now and learn more about the curriculum and instructors at:

[www.tms.org/VVUQ2024](http://www.tms.org/VVUQ2024)