

Linking and Advancing Engineering Disciplines through Computational Modeling and Simulation

Dr. David Furrer

Pratt & Whitney

Computational materials and process modeling has continued to advance over several decades. The vision of truly integrated computational material and manufacturing engineering is nearly upon us with rapid changes in how we design and develop new material and associated processing methods. The continued adoption and application of computational methods is changing the materials and manufacturing engineering disciplines, and is enabling materials and processes to be a much greater part of component and system design at the earliest possible stages. Big Data is also a critical aspect of advanced manufacturing and computational modeling. Integration of engineering disciplines and associated workflows is enabling new system, component and application design spaces. The recent NASA report: “Vision 2040: A Roadmap for Integrated, Multiscale Modeling and Simulation of Materials and Systems” (<https://ntrs.nasa.gov/citations/20180002010>) will be discussed.