

## **SEE Research Seminar**

Date: April 14<sup>th</sup>, 2026, at 10:30AM

Location: POTR 234 (Fu Room)

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### **Principal Senior Technical Fellow**

Engineering & Technology Innovation

The Boeing Company



## **Materials & Processes for Efficient and Sustainable Aviation**

### **Abstract**

Materials and their associated fabrication and assembly processes have an important role to play in improving the efficiency of aircraft and the sustainability of manufacturing operations. Innovative technologies can enable weight and drag reduction, eliminate the use of hazardous compounds, reduce consumption of water and energy during manufacture and maintenance, and maximize pathways for recycling and re-use at the end of service life - all while still meeting demanding aerospace performance requirements. An overview of novel materials and processes for efficient and sustainable aviation will be presented within the framework of the aircraft product life cycle, highlighting opportunities, challenges, and progress towards implementation. Examples to be discussed include fiber-reinforced plastic composites, durable exterior coating systems, and functional surfaces for ice reduction and drag reduction.

### **Bio**

Dr. Jill Seebergh is a Boeing Principal Senior Technical Fellow with expertise in coatings and interface science. In her current role with Engineering & Technology Innovation, she leads the development and implementation of novel materials and processes for aircraft; for example, durable and sustainable coating systems, thermoplastic finishing, anti-icing coatings, and films for drag reduction. She has a B.S. in Chemical Engineering from Lehigh University (Bethlehem PA) and M.S. and Ph.D. degrees in Chemical Engineering from the University of Washington (Seattle WA), where she holds appointments on the Chemical Engineering External Advisory Board and as an Affiliate Professor. She is a member of the Editorial Review Board and Technical Editor for the Journal of Coatings Technology and Research and serves as a reviewer for the National Research Council's Research Associateship Programs. Dr. Seebergh was elected to the National Academy of Engineering in 2024. Other significant recognitions include Society of Women Engineers Patent Recognition Awards, University of Washington Chemical Engineering Distinguished Alumni Award, CSIRO Gold Medal for Research Achievement, and CSIRO Chief's Innovation Award.