



College of Engineering  
UNIVERSITY OF GEORGIA

# Lecture Series

## *Towards Decarbonizing Aviation with Sustainable Aviation Fuel: Some Technical Challenges and Opportunities*



### **Dr. Joshua S. Heyne**

Associate Professor, Director

Bioproducts, Sciences, and  
Engineering Laboratory

Co-director, WSU-PNNL  
Bioproducts Institute

*Washington State University  
Pacific Northwest National  
Laboratory*

**Friday**

**September 6, 2024**

**12:40 – 1:30 P**

**Driftmier  
Engineering  
Center**

**Room 1453  
(Auditorium)**

In his upcoming talk, Dr. Joshua S. Heyne will explore the current state and future directions of the sustainable aviation fuel (SAF) industry, focusing on policies, commercialization efforts, and the technical and commercial challenges and opportunities in the United States and Europe. He will discuss several innovative technologies he supports for converting carbon dioxide into jet fuel, waste terpenes into jet fuel, and sewage sludge into jet fuel. Dr. Heyne will also share insights into the development of 100% drop-in sustainable aviation fuels that minimize nonvolatile particulate matter, a key contributor to the radiative forcing of aviation.

*Dr. Joshua Steven Heyne serves as the Director of the Bioproducts, Sciences, and Engineering Laboratory at WSU Tri-Cities, Co-Director of the WSU PNNL Bioproducts Institute, a Joint Appointee at PNNL, an Associate Professor of Mechanical Engineering at Washington State University, and a Battelle Distinguished Professor. Dr. Heyne has dedicated over a decade to advancing sustainable aviation fuel (SAF) technologies. His efforts focus on streamlining the qualification process for novel SAF candidates, developing new SAF technologies, and investigating their chemical compositions to ensure they meet rigorous aerospace safety standards while minimizing aviation's environmental and health impacts. Holding a pivotal role in the FAA's sustainable aviation fuel prescreening program, he has reviewed and tested over 300 samples from more than 37 institutions across North America, Australia, and Europe. Dr. Heyne's distinguished work in green energy has earned him multiple accolades, including an EPA Green Chemistry Award, an ACS Rising Stars Award, and a Leadership Award from the Commercial Aviation Alternative Fuels Initiative (CAAFI). He brings a rich educational background with four degrees from three institutions, culminating in a Ph.D. from Princeton University in 2014.*