



Mechanical Engineering
UNIVERSITY OF WISCONSIN-MADISON

**ME 903: GRADUATE
STUDENT LECTURE SERIES
DISTINGUISHED ALUMNI**

THURSDAY | **TIME**
16 APRIL | **4:00 PM**

MECHANICAL ENGINEERING BUILDING
RM#1106



DR. KELLY SENECA
CONVERGENT SCIENCE

**From Graduate Research to Global Impact:
Building a CFD Company That Challenged Convention**

Abstract: This seminar reflects on the journey from graduate student at the University of Wisconsin–Madison to co-founding a company built on the idea that even established engineering fields can be reimaged. I will share formative experiences from my time at UW–Madison, the early vision behind building a different kind of CFD company, and the challenges of pursuing an approach that did not always align with conventional thinking.

Along the way, I will highlight how computational fluid dynamics has grown from a specialized research tool into a technology with global impact across transportation, energy, and other critical industries. More importantly, I will reflect on the lessons learned: that meaningful innovation often requires patience, resilience, and the courage to trust fundamentals over trends.

For students and researchers, the message is simple: protect your curiosity, question assumptions, and be willing to take the long path. The most impactful ideas are not always the most popular at the start, but they are the ones worth pursuing.

Bio: Dr. Kelly Senecal is a co-founder of Convergent Science, an industry-leading computational fluid dynamics software company. He is a visiting professor at the University of Oxford and a co-founder and director of the Computational Chemistry Consortium (C3). Dr. Senecal is a Fellow of the Society of Automotive Engineers (SAE), the American Society of Mechanical Engineers (ASME), and the Combustion Institute (CI). He is the Chair of the executive committee of the ASME Transportation Systems Division and a member of the board of directors of the Combustion Institute. Recent accolades include the 2019 ASME ICE Award, the 2023 SAE John Johnson Diesel Engine Research Medal, the 2023 ASME Dedicated Service Award, the 2025 ASME Soichiro Honda Medal, and the 2025 University of Wisconsin Alumni Association Luminary Award.

Dr. Senecal has long been an advocate of creating cleaner propulsion systems, with a particular focus on using CFD and HPC to enable faster design. Starting with his TEDx talk in late 2016, he has promoted a diverse mix of transportation technologies through invited talks, articles, and social media. Dr. Senecal is co-author of the book *Racing Toward Zero: The Untold Story of Driving Green*, winner of the 2022 Independent Press Award for Environment.