

MAE

Engineering
Leadership

LECTURE SERIES

THURSDAY,
SEPTEMBER 26
3:30 PM
101 DAVIS HALL



Dr. Eric Loth

Rolls-Royce Commonwealth
Professor and Chair

Department of Mechanical &
Aerospace Engineering

University of Virginia

ON DEMAND WIND ENERGY VIA ON-SITE STORAGE

ABSTRACT

Wind turbine sizes have been steadily increasing over the last few decades due to advances in system design and component technology. The next generation of wind turbines (to be installed in 2020 and beyond) are likely to include extreme-scale systems (10 MW or more). In order to eliminate the issue of wind energy's unpredictable and intermittent power supply, such extreme-scale turbine can take advantage of the tower volume for use as a compressed air energy storage system.

BIO SKETCH

Prof. Eric Loth is the Rolls Royce Professor and Chair of Mechanical and Aerospace Engineering at the University of Virginia. After he received his PhD in Aerospace Engineering at the University of Michigan in 1988, he joined the Naval Research Laboratory in Washington DC, and then started his academic career in Aerospace Engineering the University of Illinois as an Assistant Professor. He went on to rise to the position of Professor, Willet Scholar before moving to the University of Virginia. He has been named a Fellow of the American Society of Mechanical Engineers (ASME), of the American Institute of Aeronautics and Astronautics (AIAA), of the National Center for Supercomputing Applications, and of Cambridge University (Magdalene College). Loth's research includes propulsion, aerodynamics, supersonics, multiphase flow, super-hydrophobicity, extreme-scale wind turbines, and renewable energy storage systems. With his students, Loth has led or co-led more than \$20M in research funding in his career, and has authored over 300 publications and contributed to several books (in addition, a new book for Cambridge University Press will be published in 2019). Loth has received honors and awards AIAA, ASME, NASA, NSF, and the Navy. Dr. Loth has given invited talks at Cambridge, Penn, Princeton, Oxford, Harvard, and MIT. He leads the ARPA-E project team on extreme-scale morphing wind turbines that was invited to US Congress for a Congressional Showcase has received coverage in American Scientist, Popular Science, USA Today, MIT Technology Review, CNBC, and several other media outlets.



University at Buffalo

Department of Mechanical
and Aerospace Engineering

School of Engineering and Applied Sciences