

**ASQ Section 1302 Meeting
NEAT Labs at UNL
September 19, 2019 – 6:00 PM**

The Nebraska Engineering Additive Technology (NEAT) Labs offers a state-of-the-science regional hub for additive manufacturing technologies and opportunities for high-level collaborations among academia and industry. Capabilities of the technology include powder bed fusion and directed energy deposition hybrid metal additive manufacturing technologies. These systems integrate both additive and subtractive functions that allow the part to be machined as it is built – a capability imperative for creating intricate geometries such as lattice structures and complex internal cooling channels for aerospace applications.

The tour will be hosted by Dr. Mike Sealy and Dr. Prahalada Rao. The NEAT Labs is located in room 126 of Scott Engineering Center on UNL's City Campus in Lincoln, NE. For further information, visit: [neatlabs.unl.edu](https://engineering.unl.edu/NEAT/) or <https://engineering.unl.edu/NEAT/>



Dr. Mike Sealy received his Ph.D. in 2014 and B.S. in 2008 in Mechanical Engineering from The University of Alabama (UA) in Tuscaloosa. He directs the Advanced Manufacturing Research Lab at UNL and is President of Surface Integrity LLC, a med-tech startup developing the next generation of biodegradable orthopedic implants. He has made significant contributions to the fields of manufacturing, medical devices, and sustainability. While he was a postdoctoral scholar in the Consortium for Surface Integrity and Functionality at UA, his research focused on sustainable manufacturing and energy

consumption during milling. His Ph.D. research has received national and international recognitions from ASME, SME, ASM, and MRS, and focused on processing, surface integrity, and performance of biodegradable magnesium-calcium implants by laser shock peening. He is the recipient of numerous research awards including 2nd Place at the MRS International iMatSci Competition (2014), Mechanical Engineering Graduate Student of the Year by the Alabama Society of Professional Engineers (2011), NAMRI/SME Outstanding Paper Award (2009), Pi Tau Sigma Outstanding Graduate Student in UA/ME (2009 & 2010), and Randal Outstanding Undergraduate Research Award at UA (2008). He is a member of ASME, Pi Tau Sigma, and BioAlabama.



Dr. Prahalada Rao's scholastic passion can be encapsulated in three words: Manufacturing, Sensing, and Analytics. His research focuses on thermal modeling, in-process sensor-based monitoring, and diagnosis of additive manufacturing processes (3D printing). He is the recipient of multiple grants from the National Science Foundation

(NSF), including the 2018 NSF CAREER award. He earned the 2017 Yoram Koren Outstanding Young Manufacturing Engineer Award by the Society of Manufacturing Engineers. At UNL Dr. Rao teaches courses in Additive Manufacturing (MECH 498/898), Statistics (MECH 321), and Quality Control (MECH 422/822). He is an amateur radio ARRL General Class licensee with the call sign K5RAO.