Owing to a superior combination of mechanical properties and environmental resistance, Ni-based superalloys are an important class of alloys that are used in some of the most aggressive service environments involving high temperatures, high pressures, corrosive and oxidizing environments. Mostly fabricated through a variety of established alloy manufacturing practices, additive manufacturing (AM) is increasingly being considered and utilized for select superalloy components due to its demonstrated potential for shorter lead times, near-net shape production, and novel component design and cooling optimization. This talk will highlight several of NETL’s current research activities in additive manufacturing of Ni-based superalloys under the Advanced Turbines and Advanced Materials Development programs, including in AM process optimization, screening hydrogen fuel injector candidates, and processing-structure-property relationships.

**BIOGRAPHY**

Dr. Chantal Sudbrack is a Senior Research Engineer with Structural Materials Team within the Research & Innovation Center at the U.S. Department of Energy's National Energy Technology Laboratory. Her research focuses on advancing the development of affordable, durable, heat-resistant alloys for structural applications relevant to the energy sector. She is currently leading the effort to grow metals additive manufacturing research NETL. Dr. Sudbrack received her Ph.D. in Materials Science and Engineering from Northwestern University, her B.S in Materials Science and Engineering from Columbia University, and her B.A. in Chemistry from Reed College.