**Advanced Manufacturing in the Age of Digital Transformation**
Session Co-chairs: Li Chang, Boeing, and Tarik Dickens, FAMU-FSU College of Engineering

The synergy of the past manufacturing enabling revolutions has made pathways for highly efficient systems of the future. The industrial and information revolutions have merged into a fourth industrial revolution known as the digital age, where information is ubiquitous. The culmination of these two streams has been denoted as 'Industry 4.0'. The expanse of this fourth industrial revolution is signified in NAE's Grand Challenges, where wide applicability and engineering solutions can transform the societal landscape beyond inhabiting just our planet. This is a new frontier to imagine the possibilities of 22nd-century manufacturing where systems are smart, more agile, resilient and customizable to meet the needs of our growing populations.

In this session, our first speaker, ***Gabriel Burnett*** (Boeing)***,*** will introduce the future of Boeing's production system with a focus on applications of data analytics, autonomy, model-based engineering, and machine learning. Boeing is moving away from a document-centric system to becoming a Model-Based Enterprise. Hardware advances are enabling data collection, and computing advances allow that data to be leveraged across the value stream to unlock business value. The next speaker, ***Christapher Lang*** (NASA Langley) will motivate an introduction in computational modeling used in the sequencing of digital manufacturing, with emphasis on metal additive manufacturing. ***Christian Hubicki*** (Florida State University) will introduce novel directions of bioinspired robots for the future of digital manufacturing. Finally, ***Pamela Kobryn*** (Air Force Research Lab) will discuss the AFOSR push for the Digital Twin as one of the nation's earliest adopters, highlighting its impact on U.S. installations as digital engineering could boost efficiency, slash costs, increase agility and reveal problems before the production stage.