Research

Rebecca Kurfess

11120 Roane Dr. Knoxville, TN 37934

Education Massachusetts Institute of Technology

Doctor of Philosophy in Mechanical Engineering

Massachusetts Institute of Technology

Master of Science in Mechanical Engineering

Massachusetts Institute of Technology

Bachelor of Science in Mechanical Engineering

With a Minor in German Studies

MIT Mechanosynthesis Laboratory

Graduate Research Assistant

- Thermal modeling of large-scale polymer extrusion additive manufacturing
- Derivation of normalized weld time from thermal modeling to predict inter-layer weld strength

Oak Ridge National Laboratory

Manufacturing Demonstration Facility Intern

• Derivation of normalized weld time from thermal modeling to predict inter-layer weld strength

Oak Ridge National Laboratory

Manufacturing Demonstration Facility Intern

- Thermal modeling of large-scale polymer extrusion additive manufacturing
- Monitoring of the big area additive manufacturing (BAAM) system to ensure no system or part failures

MIT Precision Compliant Systems Laboratory

Undergraduate Research Assistant

• Design tests to determine material properties of epoxy used in brain tissue analysis to develop a machining technique that will enable thinner, wider, and clearer tissue samples

Teaching Multi-Stakeholder Negotiation for Technical Experts

Teaching Assistant

- Prepare instructions and materials for biweekly negotiations
- Provide guidance to students on negotiation styles and techniques
- Assisted in moving the course online during the coronavirus pandemic

MIT Gordon Engineering Leadership Program

Head Teaching Assistant

• Prepare instructions and materials for weekly leadership labs

Design and Manufacturing II

Teaching Assistant

• Designed and adapted hands-on weekly learning modules to give students an understanding of the fundamentals of common manufacturing processes

Activities

Society of Manufacturing Engineers (2013 -Present); Society of Women Engineers (2013 - Present); American Society of Mechanical Engineers (2013 - Present); Pi Beta Phi Fraternity (2014 - Present); Pi Tau Sigma Honors Society (2015 - Present), Tau Beta Pi Honors Society (2016 - Present)

Skills Computer: MATLAB, Python, SolidWorks, Mastercam, HSMWorks

Machine Shop Experience: Manual Machines, CNC Lathe and Mill,

Basic Metrology, Injection Molding, FDM, SLA

Cambridge, MA May 2022

Cambridge, MA

September 2019

Cambridge, MA June 2017

Cambridge, MA

Spring 2018 – Present

Cambridge, MA Summer 2019

Cambridge, MA Summer 2018

Cambridge, MA

Fall 2014 – Spring 2017

Cambridge, MA Spring 2020

Cambridge, MA Fall 2016 - Present

Cambridge, MA Fall 2019