

LEVI M. BARKER PH.D.

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EDUCATION	Ph.D. in Mechanical Engineering Spring 2027 <i>University of Utah</i> Salt Lake City, Utah • Magnetics & Medical Robotics under Dr. Jake J. Abbott • Dissertation Title: “Linear Modeling and Model-based Manipulation of Conductive Nonmagnetic Objects Using Magnetic Induction” B.S./M.S. in Mechanical Engineering Spring 2025 <i>University of Utah</i> Salt Lake City, Utah • Realized a novel stroke rehabilitation prototype for remapping neural pathways (Pat. Pend.) • Lead a mechatronics team in the design and creation of a confection sorting robot
PUBLICATIONS	1. L.M. Barker, T.J. Allen, J.J. Abbott, “Force and Torque Induced on a Conductive Nonmagnetic Cylinder by a Rotating Magnetic Dipole.” <i>IEEE Transactions on Magnetics</i>, (under review) 2. T.J. Allen, L.M. Barker, J.J. Abbott, “Assume a Spherical Cube: Bounding the Force and Torque Induced on a Conductive Nonmagnetic Cube by a Rotating Magnetic Dipole.” <i>IEEE Magnetics Letters</i>, 2026 3. L.M. Barker, T.J. Allen, A.J. Sperry, J.J. Abbott, “Revisiting the far-field model of the force and torque induced on a conductive nonmagnetic sphere by a rotating magnetic dipole.” <i>Scientific Reports</i>, 2025
RELEVANT EXPERIENCE	Instructor: ME EN 3220 Dynamic Systems and Control Summer 2026 <i>University of Utah</i> Salt Lake City, Utah • Instructed and evaluated 20 undergraduate students • Digitized and converted department content to WCAG AA 2.1 accessibility standards Engineering Tutor Dec. 2021 – May 2023 <i>University of Utah</i> Salt Lake City, Utah • Tutored 50 students weekly in mathematics, programming, statics, dynamics, robotics, manufacturing, design and CAD modeling • Encouraged critical thinking, time management, and test-taking skills • Facilitated a safe and welcoming environment for learning Undergraduate Researcher Summer 2022 <i>Human Centered Haptics and Robotics Lab</i> Salt Lake City, Utah • Characterized materials for utilization within robotic prosthetics and force sensing devices • Designed, manufactured, and programmed a custom linear indentation instrument • Proposed and secured an Undergraduate Research Opportunity Program grant Continuous Improvement Intern Summer 2021 <i>Maersk</i> Salt Lake City, Utah • Implemented aspects of Lean, Six Sigma, and 5S in a warehouse-within-a-warehouse • Analyzed and improved productivity by introducing protocol and personnel training reducing annual overhead by \$40,000 Pyrolysis Plant Operator Aug 2019 – May 2020 <i>USTAR Bioenergy Center</i> Logan, Utah • Collected and analyzed production samples, in accordance with safety protocol • Troubleshooted and rectified mechanical, electrical, and thermodynamical problems
RECOGNITION	• Accessibility Training Certificate – Price College of Engineering 2026 • Student Leader of the Year – Department of Mechanical Engineering 2023 • Certified Solidworks Associate – Dassault Systemes 2018
SKILLS	Technical skills: Design of experiments, data visualization, CAD modeling, PCB design Programming: OOP, Python, LaTeX, Git, MATLAB, Simulink, Arduino Professional skills: Lifelong learner, critical thinker, team leader, detail-oriented