

JACOB MERSON

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Education

- **Rensselaer Polytechnic Institute**—Troy, NY May, 2015
Bachelor of Science in Mechanical Engineering GPA: 3.53 (overall)

Professional Experience

- **Los Alamos National Labs**—Los Alamos, NM *Research Intern: 2014–present*
 - Designed experiment to collect in-situ data of opposed indentation with digital image correlation (DIC) and resistance strain gauges. (mentor: Mike Prime)
 - Scripted Abaqus simulations to test geometric parameters of indentation process.
 - Analyzed and reduced DIC data to extract strains and deformations with rigid body motion removed.
 - Removed modeling errors and obtained better agreement between a finite element model and data.
- **Undergraduate Research**—Troy, NY *Research Assistant RPI Nano-M3 Lab: 2011–present*
 - Analyze micro machining of bone with finite element analysis, and milling experiments for orthopedic surgical applications. (Advisor: Johnson Samuel)
 - Developed bone microstructure staining procedure.
 - Conducted micromachining experiments on bone (funded by NSF CAREER award).
 - Created concept designs for state of the art 3D printer for surgeon training (funded by Department of Defense).
- **Undergraduate Research**—Troy, NY *Research Assistant RPI Computer Science Robotics Lab: 2011*
 - Developed mechanical test beds for RPI computer science robotics lab. (Advisor: Jeff Trinkle)
 - Developed safety procedures for small machine shop.
- **DeLorme**—Yarmouth, ME *Technology Intern: 2011*
 - Developed a remote embedded system to track traffic. This system interfaced with the DeLorme inReach™ satellite communicator and DeLorme XMap GIS software.

Publications

- *In Situ Interrogation to Resolve Inaccuracies in a Process Model* Los Alamos Weapon Systems Engineering Student Symposium, 2014
- *Modeling the Effect of Nanofiller Geometry on Machining Responses in Advanced Composites* in preparation to be submitted to the ASME Journal of Manufacturing, Nov 2014
- *Effects of Bone Microstructure on Cutting Response as Seen in Orthopedic Surgery* poster presentation at RPI Undergraduate Research Symposium, 2012

Leadership Experience

- **RPI Professional Leadership Program**—Troy, NY 2013-2014
 - Full year training program for management and leadership skills.
- **Phi Gamma Delta: Fraternity**—Troy, NY *Vice President of Community Service: 2013–2014*
- **Pi Tau Sigma: Mechanical Engineering Honors Society**—Troy, NY
- **Boy Scouts of America**—Falmouth, ME *Eagle Scout: 2011*
 - Refurbished old unused bikes for donation to a local charity.

Software

- Microsoft Office Suite, LaTeX, Python, C, C++, Matlab, NX, Solid Edge, Solid Works, Abaqus, Hypermesh, Linux, OSX, Windows

Awards

- **Dean's List**—Troy, NY *Spring, 2011–Present*
- **Rensselaer Polytechnic Founders Award of Excellence**—Troy, NY *May, 2013*
 - Awarded to top one percent of students to honor academic excellence, creativity, discovery and leadership.