

Matthew Petersen

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EDUCATION Double degree **Sc.B. Hon. Mechanical Engineering**, A.B. Assyriology **GPA 3.8**
Brown University, Providence RI (Expected Date of Graduation: May 2017)

COURSEWORK *Engineering:* Statics, Dynamics and Vibrations, Electrical Circuits and Signals, Materials Science, Honors Differential Equations (Partial and Ordinary), Electricity & Magnetism, Thermodynamics, Honors Linear Algebra, Power Engineering, Advanced Fluid Mechanics, Soil Mechanics, Advanced Mechanics of Solids, Heat and Mass Transfer, Advanced Engineering Optimization, Scientific Computing in C++

EXPERIENCE	11/2016 - 12/2016	Projects TA	Fluid Mechanics (ENGN 0810), Brown University
	5/2016 - 8/2016	SULI Intern	Tribology Group, Argonne National Laboratory, Lemont, IL
	2/2014 - Present	Research Assistant	Henann Lab, Brown University, Providence, RI
	3/2014 - Present	House Manager	Technology House, Brown University, Providence, RI
	5/2014 - 8/2014	Intern	NuScale Power LLC, Corvallis, OR
	8/2012	Intern	Microproducts Breakthrough Institute, Corvallis, OR

SKILLS **Experimental Design and Characterization**

- *Argonne:* Performed metallographic sectioning and sample preparation. Operated micro-pitting rig tribometer to investigate white-etching cracks. Characterized crack structure and compared cracking in field specimens and laboratory samples.
- *Henann Lab:* Developed granular flow experiments for Honors Thesis. Built a bench-top lab setup to obtain image data for velocity field measurement. Worked with Franck Lab to mechanically characterize a novel polymer foam using digital image correlation.
- *ENGN 0810:* Developed final project for fluids course. Worked with wind tunnel and data-acquisition hardware to design project for students. Troubleshooted lab setup and made fixes during lab under strict time pressure.
- *Microproducts Breakthrough Institute:* Worked in the Jovanovic lab on characterizing and manufacturing embossed microchannel artificial dialysis systems. Worked with a wide range of manufacturing and characterization equipment. Developed process macros for dialysis plate production, and performed profilometry on batches of specimen embossing plates.

Engineering Analysis and Software

- Fluent in: C++, MATLAB, UNIX systems, ANSYS Mechanical, COMSOL Multiphysics, ABAQUS, SolidWorks, Autodesk Inventor. Familiar with: Rust, Arduino, Java
- *NuScale Power:* Worked in Reactor Module Design Group on mechanical design analysis using ANSYS Mechanical simulation software and SolidWorks. Prepared reactor building seismic models. Reviewed supplier drawings and created derived CAD files. Worked in an organization conforming to ASME Nuclear Quality Assurance standards for practice and documentation.

Engineering Design and Program Management

- Fabrication and construction experience - machining, welding, other hand and machine operations
- Program Manager for Brown Building Society - coordinated student teams to design and build a hovercraft. Coordinated purchasing activities with design activities to ensure project completion. Documented and implemented as-built adjustments to design when needed. Spearheaded recovery tasks to reduce weight and remove unneeded complexity from hovercraft.
- *Technology House:* Managed cleaning and housing arrangements for 50-person program house; assigned cleaning shifts and coordinated with Department of Residential Life.
- Project Lead for Brown Amateur Radio Club carrier current broadcasting system.

Writing and Communication

- Elementary proficiency in German, Japanese, Akkadian
- Extensive academic writing experience in course of Assyriology degree
- *NuScale Power:* Prepared calculations and documents relating to weight inventory and modeling.
- Fluent in L^AT_EX document preparation language
- Proficient in Office products, Adobe, some proficiency in HTML, CSS
- *Argonne:* Produced research report and symposium poster
- *Henann Lab:* Produced research symposium presentation poster, produced Honors Thesis

HOBBIES

Societies

ASME, Brown Chapter Co-President

Extracurriculars

Brown Amateur Radio Club

Brown Building Society (Project Manager)

Brown University Band (Trombone)

References on reverse

REFERENCES **David L. Henann**–Academic Advisor, James R. Rice Assistant Professor of Engineering
Email: david_henann@brown.edu

Aaron Greco–Supervisor, Argonne National Laboratory, Tribology Group (Summer 2016)
Email: greco@anl.gov