



## ALEX HAGEN

(765)-418-4155

ahagen@purdue.edu

 [linkedin.com/in/alexander-hagen](https://www.linkedin.com/in/alexander-hagen)

 [github.com/alexhagen](https://github.com/alexhagen)

Portfolio - [alexhagen.github.io](https://alexhagen.github.io)

### EDUCATION

---

Jan. 2009 - Present Purdue University

- ⇒ Doctorate of Philosophy in Nuclear Engineering, *Final Defense in February 2018*
- ⇒ Master of Science in Nuclear Engineering, Minor in Computational Science and Engineering, *August 2014*
- ⇒ Bachelor of Science in Nuclear Engineering, *May 2012*

### RESEARCH POSITIONS

---

May 2012 - Present Graduate Researcher - Metastable Fluid Research Laboratory

- ⇒ Performed successful proof of concepts for 4 new special nuclear material interdiction methods
- ⇒ Developed Tensioned Metastable Fluid Detectors for use in active interrogation for the DHS/DNDO
- ⇒ Developed validation method and multiphysics simulation of Acoustically Tensioned Detector systems

May 2011 - Aug. 2011 Undergraduate Laboratory Intern - Argonne National Laboratory Nuclear Engineering Division

- ⇒ Validated multiphysics fission reactor simulation against legacy codes and experiment

### INDUSTRIAL EXPERIENCE

---

Dec. 2012 - Present Engineering Consultant - Sagamore Adams Laboratories, LLC.

- ⇒ Conceptualized, designed, and characterized 2 novel neutron detector systems that were released to market
- ⇒ Upgraded neutron detection systems per customer requirements for homeland security applications

Jan. 2009 - Jan. 2011 Industrial Design Assistant - Steiner Enterprises

- ⇒ Designed, drafted, and prototyped products as part of a small team for the education industry
- ⇒ Developed 6 products from concept to production for the marketplace
- ⇒ Sourced, revised, or formalized the machine drawings and designs of over 30 other products

### SELECTED PUBLICATIONS AND CONFERENCE PRESENTATIONS

---

- ⇒ Hagen, et al. "Detection of Special Nuclear Material in Cargo using Continuous Neutron Interrogation and Tensioned Metastable Fluid Detector." *Transactions of the American Nuclear Society*, 2016
- ⇒ Archambault, Hagen, et al. "Threshold Rejection Mode Active Interrogation of SNMs... ..with Centrifugal and Acoustic Tensioned Metastable Fluid Detectors." *Transactions of Nuclear Science*, 2016.
- ⇒ Hagen, et al. "Characterization and Optimization of a Tensioned Metastable Fluid Nuclear Particle Sensor Using Laser Based Profilometry." *Journal of Nuclear Engineering and Radiation Science*, 2015

### PATENTS

---

- ⇒ Taleyarkhan, Bakken, Fisher, Hagen, Kosty. Polylactic acid adhesive compositions and methods for their preparation and use. *World Patent # WO2014078720A1*, 2014

### LEADERSHIP ROLES

---

- ⇒ Aug. 2012 - May 2017 President of NEGO (Nuclear Engineering Graduate Organization)
- ⇒ Aug. 2014 - May 2016 Chair of Purdue Graduate Student Government (PGSG) Advancement Committee
- ⇒ Aug. 2013 - May 2016 Senator representing Nuclear Engineering to Purdue Graduate Senate
- ⇒ May. 2011 - May 2012 President and Captain of Purdue Men's Club Soccer

### HONORS AND AWARDS

---

- ⇒ May 2017 Department of Energy Innovation in Nuclear Technology R&D Award
- ⇒ Nov. 2016 ANS Young Member's Group Best Paper Award
- ⇒ Oct. 2016 IEEE Sensors Conference Demonstration 1st Prize
- ⇒ Apr. 2016 Purdue Engineering Outstanding Service Award
- ⇒ July 2014 Received Best Poster Award and Best Paper Award at Intl. Conference on Nuclear Engineering 22

SKILLS AND REFERENCES AVAILABLE UPON REQUEST