

Jackson R. Harter

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RESEARCH INTERESTS

Boltzmann transport, deterministic methods, molecular dynamics, thermal conductivity, computational methods, nuclear materials, parallel computing, high temperature materials, fast spectrum nuclear reactors

EDUCATION

Oregon State University, Corvallis, Oregon

- Doctor of Philosophy (Ph.D.) in Nuclear Engineering Sep 2015 – Present
 - Adviser: Todd Palmer
 - Research areas: Deterministic phonon transport, lattice thermal conductivity, anharmonic phonon interaction, boundary resistance, transport theory
 - Minor: Materials Science
- Master of Science (M.S.) in Nuclear Engineering Sep 2013 – Sep 2015
 - Thesis: “Predicting Thermal Conductivity in Nuclear Fuels using Rattlesnake-Based Deterministic Phonon Transport Simulations”
 - Minor: Materials Science
- Bachelor of Science (B.S.) in Nuclear Engineering Sep 2009 – Jun 2013

Western Culinary Institute, Portland, Oregon

- Associate of Arts (A.A.) in Culinary Arts Aug 2003 – Nov 2004

WORK EXPERIENCE

Los Alamos National Laboratory, Los Alamos, New Mexico

- Intern, Material Science and Technology (MST-8) Jun 2017 – Oct 2017
 - Research areas: Developed fission gas diffusion model in BISON using radiation cluster dynamics methods
 - Supervisor: Topher Matthews

Idaho National Laboratory, Idaho Falls, Idaho

- Intern, Fuel Modeling & Simulation Jun 2016 – Sep 2016
 - Research areas: Developed thermo-mechanical model of DISSECT irradiation experiment, coding thermal boundary resistance model for Rattlesnake
 - Supervisor: Daniel Schwen, Dan Wachs

Idaho National Laboratory, Idaho Falls, Idaho

- Intern, Fuel Modeling & Simulation Jun 2015 – Sep 2015
 - Research areas: Phonon transport, thermal conductivity, code development
 - Supervisor: Daniel Schwen

NuScale Power, Corvallis, Oregon

- Intern, Probabilistic Risk Assessment Jul 2013 – Jan 2015
 - Work responsibilities: Severe accidents, safety analysis, SMR, RELAP-5, MELCOR
 - Supervisor: Bill Galyean

ACADEMIC EXPERIENCE

Oregon State University, Corvallis, Oregon

- Graduate Research Assistant Sep 2014 – Jun 2015
 - Research areas: Deterministic phonon transport, thermal conductivity, UQ methods
 - Supervisor: Todd Palmer

Oregon State University, Corvallis, Oregon

- Graduate Teaching Assistant Sep 2013 – Jun 2014
 - Classes: Neutronics I, Neutronics II, Nuclear Reactor Laboratory
 - Supervisors: Qiao Wu, Todd Palmer, Robert Schickler

ACADEMIC AWARDS

- Henry W. & Janice J. Schuette Graduate Fellowship 2017 – 2018
- Henry W. & Janice J. Schuette Graduate Fellowship 2016 – 2017
- Henry W. & Janice J. Schuette Graduate Fellowship 2015 – 2016
- National Academy for Nuclear Training Fellowship 2013 – 2014
- Best Graduate Presentation Apr 2015
 - American Nuclear Society Student Conference
 - Math and Computation

- Best Senior Design Project, Nuclear Engineering
Oregon State University
“Target Delivery System for ^{238}Pu Production”

Jun 2013

SKILLS

BISON, Cubit, Git, LAMMPS, L^AT_EX, MARMOT, MATLAB, MCNP5/6/X, Microsoft Office, MOOSE, ParaView, Rattlesnake/Yak, RELAP5-3D, Windows/OSX/Linux, C++ (novice)

PUBLICATIONS

JOURNALS

- [1] J. Harter, L. de Sousa Oliveira, A. Truszkowska, T.S. Palmer, P.A. Greaney. “Deterministic Phonon Transport Predictions of Thermal Conductivity in Uranium Dioxide with Xenon Impurities” *ASME. J. Heat Transfer*. 2018; **140**(5):051301-051301-11. doi:10.1115/1.4038554.
- [2] J. Harter, P.A. Greaney and T. Palmer, “Quantifying the Uncertainty in Deterministic Phonon Transport Calculations of Thermal Conductivity using Polynomial Chaos Expansions”, *Transactions of the American Nuclear Society*, **115**, 611–614 (2016).
- [3] J. Harter, P.A. Greaney and T. Palmer, “Characterization of Thermal Conductivity using Deterministic Phonon Transport in Rattlesnake”, *Transactions of the American Nuclear Society*, **112**, 829–832 (2015).

CONFERENCES & PRESENTATIONS

- [1] J. Harter, “Frequency dependence in deterministic phonon transport simulations”, *Applied Mathematics and Computation Seminar*, Corvallis, OR, Mar 2018.
- [2] J. Harter, T.S. Palmer and P.A. Greaney, “Frequency dependence in deterministic phonon transport simulations”, *International Conference on Transport Theory*, Monterey, CA, Oct 2017.
- [3] J. Harter, Aria Hosseini, T. Palmer and P.A. Greaney, “Deterministic Simulation of Frequency Dependent Phonon Transport in Nuclear Materials”, *Materials Research Society Spring Meeting*, Phoenix, AZ, Apr 2017.
- [4] J. Harter, P.A. Greaney, and T. Palmer, “Quantifying the Uncertainty in Deterministic Phonon Transport Calculations of Thermal Conductivity using Polynomial Chaos Expansions”, *American Nuclear Society Winter Meeting*, Las Vegas, NV, Nov 2016.
- [5] J. Harter, L. de Sousa Oliveira, A. Hosseini, T. Palmer and P.A. Greaney, “Efficient Deterministic Simulation of Phonon Transport in Nuclear Materials”, *Materials Science & Technology*, Salt Lake City, UT, Oct 2016.
- [6] J. Harter, P.A. Greaney, and T. Palmer, “Thermal Conductivity Prediction using Deterministic Phonon Transport in Rattlesnake”, *International Conference on Transport Theory*, Sicily, Italy, Sep 2015.
- [7] J. Harter, P.A. Greaney, and T. Palmer, “Characterization of Thermal Conductivity using Deterministic Phonon Transport in Rattlesnake”, *American Nuclear Society Professional Conference*, San Antonio, Texas, Jun 2015.
- [8] J. Harter, P.A. Greaney, and T. Palmer, “Characterization of Thermal Conductivity using Deterministic Phonon Transport in Rattlesnake”, *American Nuclear Society Student Conference*, College Station, Texas, Apr 2015.
- [9] L. Oliveira, P. A. Greaney and J. Harter, “Application of a multiscale Boltzmann transport solver to characterize thermal resistance from irradiation induced morphological changes in graphite”, *Materials Research Society Spring Meeting*, San Francisco, California, Apr 2015.

PROFESSIONAL AFFILIATIONS & ACTIVITIES

American Nuclear Society, Chicago, IL

- Member

2009 – Present

CAMPUS ACTIVITIES

American Nuclear Society, Oregon State University Student Section

- President
- President
- Vice President

Sep 2017 – Present
Mar 2013 – Jun 2013
Sep 2012 – Jun 2013

**OTHER WORK
EXPERIENCE**

Western Culinary Institute, Portland, Oregon

Apr 2006 – May 2008

- Chef Instructor, Restaurant Bleu
 - Taught culinary school in restaurant practicum
 - Taught practical basics of working in restaurant kitchens: time management, food preparation & utilization, menu development and costing, managing personal relationships
 - Oversaw classes of 6-80 students, rotating every 6 weeks