

Kathryn D. Huff

CONTACT INFORMATION	Blue Waters Assistant Professor <i>University of Illinois, Urbana-Champaign</i> <i>Nuclear, Plasma, and Radiological Engineering</i> <i>Affiliate Faculty, National Center for Supercomputing Applications</i> <i>Affiliate Faculty, Computational Science and Engineering</i>	mobile: (281) 734-1342 e-mail: katyhuff@gmail.com website: katyhuff.github.com
PHD	University of Wisconsin - Madison, NUCLEAR ENGINEERING	Aug 2008 – Aug 2013
BA	University of Chicago, PHYSICS	Aug 2004 – Jun 2008
RESEARCH EXPERIENCE	University of Illinois at Urbana-Champaign, Urbana, IL <i>Assistant Professor, Nuclear Plasma and Radiological Engineering</i> <i>Blue Waters Asst. Prof., National Center for Supercomputing Applications</i>	Aug 2016 – Present Aug 2016 – Present
	University of California - Berkeley, NE Dept., Berkeley, CA <i>Postdoctoral Scholar, Nuclear Science and Security Consortium</i> <i>Data Science Fellow, Berkeley Institute for Data Science</i>	Sep 2013 – Jul 2016 Aug 2014 – Jul 2016
	Argonne National Laboratory, Argonne, IL <i>Laboratory Graduate Research Appointee, Used Fuel Disposition Campaign</i>	Jun 2011 – Aug 2013
	University of Wisconsin - Madison, NEEP Dept., Madison, WI <i>Graduate Research Assistant, Computational Nuclear Engineering Research Group</i>	Jun 2008 – Aug 2013
	Idaho National Laboratory, Idaho Falls, ID <i>Graduate Research Assistant, Systems Analysis Campaign</i>	Jun – Aug 2010
	Kavli Institute For Cosmological Physics, Chicago, IL <i>Research Assistant, Laboratory for Astrophysics and Space Research</i>	Jan 2005 – Jun 2008
	Universidad de Chile, Physics Dept., Santiago, Chile <i>Research Assistant, Chicago-Chile Research Exchange Program</i>	Jun – Sep 2006
	Los Alamos Neutron Science Center, Los Alamos, NM <i>Research Assistant, LANSCE-3</i>	Jun – Sep 2004 May – Aug 2003
RECENT HONORS AND AWARDS	American Nuclear Society, Oestmann Professional Women’s Achievement Award AE3, Collins Scholars Program Graduate NPRES, Students Award for Excellence in Undergraduate Teaching UIUC, Teachers Ranked as Excellent American Nuclear Society, Young Member Excellence Award National Energy Research Scientific Computing Allocation, Senior Investigator Data Science Fellowship, Berkeley Institute for Data Science, UC Berkeley Nuclear Science and Security Consortium Postdoctoral Fellowship, UC Berkeley	2017 2017 2017 Fall 2016 2016 2015–2016 2014–2016 2013–2016
BOOKS	[1] Scopatz, A., Huff, K. . “Effective Computation in Physics: Field Guide to Research in Python” O’Reilly Media. ISBN:978-1491901533 , 2015.	
JOURNAL PUBLICATIONS	[2] Lindsay, A., Ridley, G., Rykhlevskii, A., Huff, K. “Introduction to Moltres: an Application for Simulation of Molten Salt Reactors”, Annals of Nuclear Energy , https://doi.org/10.1016/j.anucene.2017.12.025 , Apr. 2018. [3] Smith, A.M., Niemeyer, K.E., Katz, D.S., Barba, L. A., Githinji, G., Gymrek, M., Huff, K. et al. 2018. “Journal Of Open Source Software (JOSS): Design and First-Year Review.” PeerJ Computer Science 4: e147. https://doi.org/10.7717/peerj-cs.147 . Feb. 2018. [4] Lindsay, A., Huff, K. “Moltres: finite element based simulation of molten salt reactors”, The Journal of Open Source Software , https://doi.org/10.21105/joss.00298 , Jan. 2018. [5] Allen, A., Aragon, C., Becker, C., Carver, J., Chis, A., Combemale, B., Croucher, M., Crowston, K., Garijo, D., Gehani, A., Goble, C., Haines, R., Hirschfeld, R., Howison, J., Huff, K. , Jay, C., Katz, D.S., Kirchner, C., Kuksenok, K., Lämmel, R., Nierstrasz, O., Turk, M., Nieuwpoort, R.	

van, Vaughn, M., Vinju, J.J., “Engineering Academic Software (Dagstuhl Perspectives Workshop 16252).” **Dagstuhl Manifestos** 6, 120. <https://doi.org/10.4230/DagMan.6.1.1>, 2017.

[6] **Huff, K.** “Rapid Methods for Radionuclide Contaminant Transport in Nuclear Fuel Cycle Simulation”, **Advances in Engineering Software**, <https://doi.org/10.1016/j.advengsoft.2017.07.006>, Dec. 2017.

[7] Andreades, C., Cisneros, A.T., Choi, J.K., Chong, A.Y., Fratoni, M., Hong, S., Huddar, L.R., **Huff, K.**, Kendrick, J., Krumwiede, D.L., Laufer, M., Munk, M., Scarlat, R.O., Wang, X., Zwiebaum, N., Greenspan, E. and P. Peterson. “Design Summary of the Mark-I Pebble-Bed, Fluoride SaltCooled, High-Temperature Reactor Commercial Power Plant,” **Nuclear Technology**, vol. 195, no. 3, pp. 222-238, <https://doi.org/10.13182/NT16-2>, Sep. 2016.

[8] **Huff, K.**, Gidden, M., Carlsen, R., Flanagan, R., McGarry, M., Opotowsky, A., Schneider, E., Scopatz, A., Wilson, P. “Fundamental Concepts in the CYCLUS Nuclear Fuel Cycle Simulation Framework.” **Advances in Engineering Software**, vol. 94, pp. 4659, <https://doi.org/10.1016/j.advengsoft.2016.01.014>, Apr. 2016.

[9] Aruliah, D.A., Brown, C.T., Chue Hong, N.P., Davis, M., Guy, R.T., Haddock, S.H.D., **Huff, K.**, Mitchell, I., Plumbley, M., Waugh, B., White, E.P., Wilson, G.V., and Wilson, P.P.H. “Best Practices For Scientific Computing.” **PLOS Biology**, Vol 1, Issue 12, <https://dx.doi.org/10.1371/journal.pbio.1001745>, 2014.

[10] Clerc, M., Dunstan, J., **Huff, K.**, Mujica, N., Varas, G. “Liquid-Solid-Like Transition in Quasi-One-Dimensional Driven Granular Media ”, **Nature Physics**, Vol 4, 249 - 254, <https://doi.org/10.1038/nphys884>, 2008.

SELECTED
REFEREED
CONFERENCE
PROCEEDINGS

[11] Niemeyer, K., Smith, A., Barba, L., Githinji, G., Gymrek, M., **Huff, K.**, Katz, D., Madan, C., Cabunoc, A. “Introducing JOSS: The Journal of Open Source Software” **Scientific Computing with Python Conference (SciPy 2017)**, Austin, TX. July 2017.

[12] **Huff, K.**, Bae, J., Mummah, K., Flanagan, R., Scopatz, A. “Current Status of Predictive Transition Capability in Fuel Cycle Simulation” **GLOBAL 2017 International Nuclear Fuel Cycle Conference**, Seoul, South Korea. September 2017.

[13] Bae, J., Roy, W., **Huff, K.** “Benefits of Siting a Borehole Repository on Non-Operating Nuclear Facility” Paper 19727. **International High-Level Radioactive Waste Management Conference (IHLRWM 2017)**, Charlotte, NC. April 2017.

SIGNIFICANT
INVITED
TALKS

SciFOO , Google X, <i>Invited Camper</i> .	Jun 23, 2018
U. Michigan , Nuclear Engineering and Radiological Sciences <i>Seminar</i> .	Feb 9, 2018
Olin College of Engineering , <i>Seminar</i> .	Oct 31, 2017
Argonne National Laboratory , NNSA Nuclear Nonproliferation, <i>Seminar</i> .	Sep 21, 2017
SciPy 2017 , Scientific Python Conference, Austin, TX, <i>Keynote</i> .	Jul 12, 2017
ANS Annual , Mathematics and Computation Division, Current Issues, <i>Panel</i> .	Jun 12, 2017
Oak Ridge National Laboratory , RPNDS, <i>Seminar</i> .	Jun 29, 2017
PyCon 2017 , Portland, OR. <i>Keynote</i> .	May 19, 2017
U. California, Davis , Mechanical and Aerospace Engineering, <i>Seminar</i> .	April 20, 2017
U. Illinois , Computational Science and Engineering, <i>Seminar</i> .	Feb 2, 2017
U. California, Berkeley , Berkeley Institute for Data Science, <i>Symposium</i> .	Jan 27, 2017
PyData 2016 , Chicago, IL. <i>Keynote</i> .	Aug 27, 2016
Oak Ridge National Laboratory , RPNDS, <i>Seminar</i> .	Mar 3, 2016
U. Tennessee, Knoxville , Nuclear Engineering, <i>Seminar</i> .	Mar 2, 2016
SC15, Austin TX , Python in High Performance Computing workshop, <i>Keynote</i> .	Nov 15, 2015

SELECTED
PROFESSIONAL
SERVICE

Past Chair (<i>ex officio</i>), Fuel Cycle & Waste Management Division, ANS	2016–2017
Co-Organizer , Technical Workshop on Fuel Cycle Simulation	2017
Technical Program Committee , IHLRWM Conference	2017
Chair , Fuel Cycle & Waste Management Division, ANS	2016–2017
Vice Chair , Fuel Cycle & Waste Management Division, ANS	2015–2016
Chair , Steering Committee, Software Carpentry Foundation	2014–2015