

Kathryn D. Huff

CONTACT INFORMATION	Associate Professor Dept. of Nuclear, Plasma, and Radiological Engineering University of Illinois at Urbana-Champaign	Mobile: (281) 734-1342 UIUC e-mail: kdhuff@illinois.edu personal e-mail: katyhuff@gmail.com
RESEARCH INTERESTS	Advanced nuclear reactors and fuel cycles, multi-physics simulation, energy systems analysis, scientific computation, nuclear energy policy.	
PHD	University of Wisconsin - Madison, NUCLEAR ENGINEERING • An Integrated Used Fuel Disposition and Generic Repository Model for Fuel Cycle Analysis • Advisor: Professor Paul P.H. Wilson	Aug 2008 – Aug 2013
BA	University of Chicago, PHYSICS • Celestial Gain Calibrations of QUIET Telescope Polarimeters	Aug 2004 – Jun 2008
RESEARCH AND PROFESSIONAL EXPERIENCE	University of Illinois at Urbana-Champaign, Urbana, IL <i>Associate Professor, Nuclear Plasma and Radiological Engineering</i> <i>Affiliate Faculty, National Center for Supercomputing Applications</i> <i>Affiliate Faculty, Computational Science and Engineering</i> Director, Advanced Reactors and Fuel Cycles group. Office of Nuclear Energy, Department of Energy, Washington, DC <i>Assistant Secretary, Nuclear Energy</i> <i>Senior Advisor to the Secretary, Nuclear Energy</i> <i>Acting Assistant Secretary, Nuclear Energy</i> <i>Principal Deputy Assistant Secretary, Nuclear Energy</i> Presidentially appointed, Senate Confirmed Official leading the Office of Nuclear Energy On extended Unpaid Leave of Absence from the University of Illinois. University of Illinois at Urbana-Champaign, Urbana, IL <i>Blue Waters Assistant Professor</i> Principal Investigator, Advanced Reactors and Fuel Cycles group. 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> Developing computational tools and multiphysics models for advanced reactor safety analysis. Argonne National Laboratory, Argonne, IL <i>Laboratory Graduate Research Appointee, Used Fuel Disposition Campaign</i> Developed a used fuel disposition and generic repository computational model. University of Wisconsin - Madison, NEEP Dept., Madison, WI <i>Graduate Research Assistant, Computational Nuclear Engineering Research Group</i> Developed and applied CYCLUS, a nuclear fuel cycle systems analysis tool. Idaho National Laboratory, Idaho Falls, ID <i>Graduate Research Assistant, Systems Analysis Campaign</i> Developed software functions and requirements for the Fuel Cycle Simulator concept. Kavli Institute For Cosmological Physics, Chicago, IL <i>Research Assistant, Laboratory for Astrophysics and Space Research</i> Programmed & machined instrumentation. Planned protocol for QUIET polarimeter calibration. Universidad de Chile, Physics Dept., Santiago, Chile <i>Research Assistant, Chicago-Chile Research Exchange Program</i> Constructed and operated a far-from-equilibrium granular materials experiment.	Sep 2021 – Present Aug 2016 – Present Aug 2018 – Present May 2022 – May 2024 Jan 2022 – May 2022 May 2021 – Jan 2022 May 2021 – Jan 2022 Aug 2016 – Sep 2021 Sep 2013 – Jul 2016 Aug 2014 – Jul 2016 Jun 2011 – Aug 2013 Jun 2008 – Aug 2013 Jun – Aug 2010 Jan 2005 – Jun 2008 Jun – Sep 2006

Los Alamos Neutron Science Center, Los Alamos, NM

Research Assistant, LANSCE-3

Applied digital filtration algorithms and MCNPX models to experimental data.

Jun – Sep 2004

May – Aug 2003

HONORS AND
AWARDS

Warren K. Sinclair Medal, National Council on Radiation Protection	2024
Secretary's Honor Awards, Pathways to Commercial Liftoff Team, U.S. Department of Energy	2024
Presidential Nomination & Senate Confirmation, Assistant Secretary for Nuclear Energy	2022
Stanley H. Pierce Award, UIUC Engineering Council	2019
American Nuclear Society, Oestmann Professional Women's Achievement Award	2017
AE3, Collins Scholars Program Graduate	2017
NPRE, Students Award for Excellence in Undergraduate Teaching	2017
UIUC, Teachers Ranked as Excellent	F 2016, S 2020
American Nuclear Society, Young Member Excellence Award	2016
National Energy Research Scientific Computing Allocation, Senior Investigator	2015–2016
Data Science Fellowship, Berkeley Institute for Data Science, UC Berkeley	2014–2016
Nuclear Science and Security Consortium Postdoctoral Fellowship, UC Berkeley	2013–2016
DOE Office of Science Laboratory Graduate Appointment, Argonne National Lab	2011–2013
Roy G Post Foundation Nuclear Waste Management Graduate Scholarship	2011
John Randall Memorial Scholarship, American Nuclear Society FCWMD	2009
J.A McDeavitt Scholarship, University of Chicago, Chicago, IL	2007–2008
University Scholar Award, University of Chicago, Chicago, IL	2004–2008
Los Alamos Distinguished Student Performance Award, Los Alamos National Lab	2004

GRANTS
AWARDED

Nuclear Science and Security Consortium¹	Period: 2021–2026
Source: DOE-NNSA Office of DNN R&D	Award Total: \$25,000,000
Role: Consortium Co-PI, UIUC PI, Thrust Area Lead	Huff Allocation: \$625,000
Evaluation of micro-reactor requirements and performance in an existing well-characterized micro-grid¹	Period: 2020–2022
Source: DOE-NEUP	Award Total: \$800,000
Role: Co-PI	Huff Allocation: \$265,000
Enabling Load Following Capability in the Transatomic Power MSR¹	Period: 2018–2021
Source: ARPA - E - MEITNER	Award Total: \$999,694
Role: Principal Investigator	Huff Allocation: \$205,000
US Research Software Sustainability Institute (URSSI)	Period: 2017–2018
Source: NSF - OAC - SI2 - S2I2 Conceptualization	Award Total: \$499,999
Role: Senior Personnel	Huff Allocation: N/A
Dynamic Transition Analysis with TIMES	Period: 2018–2019
Source: I ² CNER	Award Total: \$76,359
Role: Co-PI	Huff Allocation: \$76,359
Investigation of Agricultural Uses of Nuclear Waste Heat	Period: 2017–2018
Source: Exelon	Award Total: \$151,257
Role: Co-PI	Huff Allocation: \$11,678
Consortium for Verification Technology	Period: 2015–2020
Source: DOE-NNSA Office of DNN R&D	Award Total: \$25,000,000
Role: Consortium Co-PI, UIUC PI, CVT Investigator	Huff Allocation: \$347,000
Consortium for Nonproliferation Enabling Capabilities	Period: 2014–2019
Source: DOE-NNSA Office of DNN R&D	Award Total: \$25,000,000
Role: Consortium Co-PI, UIUC PI, Thrust Area Lead	Huff Allocation: \$648,000
Collaborative, Open-Source Curriculum Development	Period: 2017–2018
Source: UIUC Strategic Instructional Innovations Program	Award Total: \$19,347
Role: Principal Investigator	Huff Allocation: \$13,000

¹PI-ship transferred to other leadership in May 2021 corresponding with unpaid leave of absence.

REU Site: INCLUSION at U. Illinois

Source: NSF - ACI

Role: Senior Personnel

Period: 2017–2020

Award Total: \$380,036

Huff Allocation: N/A

Demand-Driven Cycamore Archetypes

Source: DOE, NEUP R&D

Role: Co-PI

Period: 2016–2019

Award Total: \$800,000

Huff Allocation: **\$395,066**

BOOKS

- [1] A. M. Scopatz and **K. D. Huff**. *Effective computation in physics: Field guide to research with python*. O'Reilly Media, Sebastopol, CA, 1 edition, May 2015. URL: <http://shop.oreilly.com/product/0636920033424.do>

BOOK
CHAPTERS

- [2] S. Gesing, M. Pierce, S. Marru, M. Zentner, **K. Huff**, S. Bradley, S. B. Cleveland, S. R. Brandt, R. Ramnath, K. Kee, M. Dahan, B. M. V. Martínez, W. C. Sepulveda, and J. J. S. Mondragón. Science Gateways and AI/ML: How Can Gateway Concepts and Solutions Meet the Needs in Data Science? In *Critical Infrastructure - Modern Approach and New Developments*. IntechOpen, Mar. 2023. URL: <https://www.intechopen.com/chapters/86501>, doi:10.5772/intechopen.110144
- [3] **K. Huff**. Chapter One - Economics of Advanced Reactors and Fuel Cycles. In H. Bindra, editor, *Storage and Hybridization of Nuclear Energy*, volume 1, pages 1–20. Science & Technology Books Elsevier, Inc., Cambridge, MA, United States, 1 edition, Jan. 2019. URL: <http://www.sciencedirect.com/science/article/pii/B9780128139752000016>, doi:10.1016/B978-0-12-813975-2.00001-6
- [4] **K. Huff**. Case Study: Cyclus Project. In J. Kitzes, F. Imamoglu, and D. Turek, editors, *The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive Sciences*, volume 1. University of California Press, University of California, Berkeley, 1 edition, 2017. URL: <https://www.ucpress.edu/book.php?isbn=9780520294752>
- [5] **K. Huff**. Lessons Learned. In J. Kitzes, F. Imamoglu, and D. Turek, editors, *The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive Sciences*, volume 1. University of California Press, University of California, Berkeley, 1 edition, 2017. URL: <https://www.ucpress.edu/book.php?isbn=9780520294752>

JOURNAL
PUBLICATIONS

- [6] N. Thiollière, X. Doligez, M. Halasz, G. Krivtchik, I. Merino, B. Mouginot, A. V. Skarbeli, A. Hernandez-Solis, F. Alvarez-Velarde, F. Courtin, H. Druenne, M. Ernoult, **K. Huff**, M. Szieberth, B. Vermeeren, and P. Wilson. Impact of fresh fuel loading management in fuel cycle simulators: A functionality isolation test. *Nuclear Engineering and Design*, 392:111748, June 2022. URL: <https://www.sciencedirect.com/science/article/pii/S0029549322001029>, doi:10.1016/j.nucengdes.2022.111748
- [7] M. Turkmen, G. J. Y. Chee, and **K. D. Huff**. Machine learning application to single channel design of molten salt reactor. *Annals of Nuclear Energy*, 161:108409, Oct. 2021. URL: <https://www.sciencedirect.com/science/article/pii/S0306454921002851>, doi:10.1016/j.anucene.2021.108409
- [8] A. Chaube, A. Chapman, A. Minami, J. Stubbins, and **K. D. Huff**. The role of current and emerging technologies in meeting Japan's mid- to long-term carbon reduction goals. *Applied Energy*, 304:117669, Dec. 2021. URL: <https://www.sciencedirect.com/science/article/pii/S0306261921010308>, doi:10.1016/j.apenergy.2021.117669
- [9] A. Chapman, Y. Shigetomi, S. Chandra Karmaker, B. Baran Saha, **K. Huff**, C. Brooks, and J. Stubbins. The cultural dynamics of energy: The impact of lived experience, preference and demographics on future energy policy in the United States. *Energy Research & Social Science*, 80:102231, Oct. 2021. URL: <https://www.sciencedirect.com/science/article/pii/S2214629621003248>, doi:10.1016/j.erss.2021.102231
- [10] O. Ashraf, A. Rykhlevskii, G. V. Tikhomirov, and **K. D. Huff**. Preliminary design of control rods in the single-fluid double-zone thorium molten salt reactor (SD-TMSR). *Annals of Nuclear Energy*, 152:108035, Mar. 2021. URL: <http://www.sciencedirect.com/science/article/pii/S0306454920307313>, doi:10.1016/j.anucene.2020.108035

- [11] O. Ashraf, A. Rykhlevskii, G. V. Tikhomirov, and **K. D. Huff**. Strategies for thorium fuel cycle transition in the SD-TMSR. *Annals of Nuclear Energy*, 148:107656, Dec. 2020. URL: <http://www.sciencedirect.com/science/article/pii/S0306454920303546>, doi: 10.1016/j.anucene.2020.107656
- [12] E. A. Miernicki, A. L. Heald, **K. D. Huff**, C. S. Brooks, and A. J. Margenot. Nuclear waste heat use in agriculture: History and opportunities in the United States. *Journal of Cleaner Production*, 267:121918, Sept. 2020. URL: <http://www.sciencedirect.com/science/article/pii/S095965262031965X>, doi: 10.1016/j.jclepro.2020.121918
- [13] G. J. Chee, R. E. F. Agosta, J. W. Bae, R. R. Flanagan, A. M. Scopatz, and **K. D. Huff**. Demand-Driven Deployment Capabilities in Cyclus, a Fuel Cycle Simulator. *Nuclear Technology*, 0(0):1–22, July 2020. doi: 10.1080/00295450.2020.1753444
- [14] A. Chaube, A. Chapman, Y. Shigetomi, **K. Huff**, and J. Stubbins. The Role of Hydrogen in Achieving Long Term Japanese Energy System Goals. *Energies*, 13(17):4539, Sept. 2020. Number: 17 Publisher: Multidisciplinary Digital Publishing Institute. URL: <https://www.mdpi.com/1996-1073/13/17/4539>, doi: 10.3390/en13174539
- [15] J. W. Bae, A. Rykhlevskii, G. Chee, and **K. D. Huff**. Deep learning approach to nuclear fuel transmutation in a fuel cycle simulator. *Annals of Nuclear Energy*, 139:107230, May 2020. URL: <http://www.sciencedirect.com/science/article/pii/S0306454919307406>, doi: 10.1016/j.anucene.2019.107230
- [16] O. Ashraf, A. Rykhlevskii, G. Tikhomirov, and **K. D. Huff**. Whole core analysis of the single-fluid double-zone thorium molten salt reactor (SD-TMSR). *Annals of Nuclear Energy*, 137:107–115, Mar. 2020. URL: <http://www.sciencedirect.com/science/article/pii/S0306454919306255>, doi: <https://doi.org/10.1016/j.anucene.2019.107115>
- [17] M. Kamuda, J. Zhao, and **K. Huff**. A comparison of machine learning methods for automated gamma-ray spectroscopy. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 954:161385, Feb. 2020. URL: <http://www.sciencedirect.com/science/article/pii/S0168900218313779>, doi: 10.1016/j.nima.2018.10.063
- [18] J. W. Bae, C. E. Singer, and **K. D. Huff**. Synergistic spent nuclear fuel dynamics within the European Union. *Progress in Nuclear Energy*, 114:1–12, July 2019. URL: <http://www.sciencedirect.com/science/article/pii/S014919701930037X>, doi: 10.1016/j.pnucene.2019.02.001
- [19] J. W. Bae, J. L. Peterson-Droogh, and **K. D. Huff**. Standardized verification of the Cyclus fuel cycle simulator. *Annals of Nuclear Energy*, 128:288–291, June 2019. URL: <http://www.sciencedirect.com/science/article/pii/S0306454919300179>, doi: 10.1016/j.anucene.2019.01.014
- [20] A. Rykhlevskii, J. W. Bae, and **K. D. Huff**. Modeling and simulation of online reprocessing in the thorium-fueled molten salt breeder reactor. *Annals of Nuclear Energy*, 128:366–379, June 2019. URL: <http://www.sciencedirect.com/science/article/pii/S0306454919300350>, doi: 10.1016/j.anucene.2019.01.030
- [21] A. Lindsay, G. Ridley, A. Rykhlevskii, and **K. Huff**. Introduction to Moltres: An application for simulation of Molten Salt Reactors. *Annals of Nuclear Energy*, 114:530–540, Apr. 2018. URL: <https://linkinghub.elsevier.com/retrieve/pii/S0306454917304760>, doi: 10.1016/j.anucene.2017.12.025
- [22] A. M. Smith, K. E. Niemeyer, D. S. Katz, L. A. Barba, G. Githinji, M. Gymrek, **K. D. Huff**, C. R. Madan, A. C. Mayes, K. M. Moerman, P. Prins, K. Ram, A. Rokem, T. K. Teal, R. V. Guimera, and J. T. Vanderplas. Journal of Open Source Software (JOSS): design and first-year review. *PeerJ Computer Science*, 4:e147, Feb. 2018. URL: <https://peerj.com/articles/cs-147>, doi: 10.7717/peerj-cs.147
- [23] A. Lindsay and **K. Huff**. Moltres: finite element based simulation of molten salt reactors. *The Journal of Open Source Software*, 3(21):1–2, Jan. 2018. doi: 10.21105/joss.00298
- [24] A. Allen, C. Aragon, C. Becker, J. Carver, A. Chis, B. Combemale, M. Croucher, K. Crowston, D. Garijo, A. Gehani, C. Goble, R. Haines, R. Hirschfeld, J. Howison, **K. Huff**, C. Jay, D. S. Katz, C. Kirchner, K. Kuksenok, R. Lämmel, O. Nierstrasz, M. Turk, R. v. Nieuwpoort, M. Vaughn, and J. J. Vinju. Engineering Academic Software (Dagstuhl Perspectives Workshop 16252). *Dagstuhl Manifestos*, 6(1):1–20, 2017. URL: <http://drops.dagstuhl.de/opus/volltexte/2017/7146>, doi: 10.4230/DagMan.6.1.1

- [25] **K. Huff**. Rapid methods for radionuclide contaminant transport in nuclear fuel cycle simulation. *Advances in Engineering Software*, 114:268–281, Dec. 2017. doi:[10.1016/j.advengsoft.2017.07.006](https://doi.org/10.1016/j.advengsoft.2017.07.006)
- [26] C. Andreades, A. T. Cisneros, J. K. Choi, A. Y. Chong, M. Fratoni, S. Hong, L. R. Huddar, **K. D. Huff**, J. Kendrick, D. L. Krumwiede, M. Laufer, M. Munk, R. O. Scarlat, X. Wang, N. Zwiebaum, E. Greenspan, and P. Peterson. Design Summary of the Mark-I Pebble-Bed, Fluoride Salt–Cooled, High-Temperature Reactor Commercial Power Plant. *Nuclear Technology*, 195(3):222–238, Sept. 2016. URL: http://www.ans.org/pubs/journals/nt/a_38935, doi:[10.13182/NT16-2](https://doi.org/10.13182/NT16-2)
- [27] **K. D. Huff**, M. J. Gidden, R. W. Carlsen, R. R. Flanagan, M. B. McGarry, A. C. Opotowsky, E. A. Schneider, A. M. Scopatz, and P. P. H. Wilson. Fundamental concepts in the Cyclus nuclear fuel cycle simulation framework. *Advances in Engineering Software*, 94:46–59, Apr. 2016. arXiv: 1509.03604. URL: <http://www.sciencedirect.com/science/article/pii/S0965997816300229>, doi:[10.1016/j.advengsoft.2016.01.014](https://doi.org/10.1016/j.advengsoft.2016.01.014)
- [28] G. V. Wilson, D. A. Aruliah, C. T. Brown, N. P. Chue Hong, M. Davis, R. T. Guy, S. H. D. Haddock, **K. D. Huff**, I. M. Mitchell, M. D. Plumbley, B. Waugh, E. P. White, and P. Wilson. Best Practices for Scientific Computing. *PLoS Biol*, 12(1):e1001745, Jan. 2014. URL: <http://dx.doi.org/10.1371/journal.pbio.1001745>, doi:[10.1371/journal.pbio.1001745](https://doi.org/10.1371/journal.pbio.1001745)
- [29] M. G. Clerc, P. Cordero, J. Dunstan, **K. D. Huff**, N. Mujica, D. Risso, and G. Varas. Liquid-solid-like transition in quasi-one-dimensional driven granular media. *Nature Physics*, 4(3):249–254, Mar. 2008. URL: <http://dx.doi.org.ezproxy.library.wisc.edu/10.1038/nphys884>, doi:[10.1038/nphys884](https://doi.org/10.1038/nphys884)
- REFEREED
CONFERENCE
PROCEEDINGS [30] B. Petrovic, K. Ramey, I. Hill, E. Losa, M. Elsayi, Z. Wu, C. Lu, J. Gonzalez, D. Novog, G. Chee, **K. D. Huff**, M. Margulis, N. Read, and E. Shwegarous. Preliminary Results of the NEA FHR Benchmark Phase I-A and I-B (Fuel Element 2-D Benchmark). In *Proceedings of ANS M&C 2021*, pages 1924–1933, Virtual, Oct. 2021. American Nuclear Society. (Submitted before May 2021). URL: <https://www.ans.org/pubs/proceedings/article-50163/>
- [31] B. R. Betzler, A. Rykhlevskii, A. Worrall, and **K. D. Huff**. Impacts of Fast-Spectrum Molten Salt Reactor Characteristics on Fuel Cycle Performance. In *Proceedings of GLOBAL International Fuel Cycle Conference*, Seattle, WA, United States, Sept. 2019. American Nuclear Society. URL: <http://epubs.ans.org/?a=46968>
- [32] G. Chee, J. W. Bae, **K. D. Huff**, R. R. Flanagan, and R. Fairhurst. Demonstration of Demand-Driven Deployment Capabilities in Cyclus. In *Proceedings of Global/Top Fuel 2019*, pages 394–401, Seattle, WA, United States, Sept. 2019. American Nuclear Society. URL: <http://epubs.ans.org/?a=46949>
- [33] R. R. Flanagan, J. W. Bae, **K. D. Huff**, G. J. Chee, and R. Fairhurst. Methods for Automated Fuel Cycle Facility Deployment. In *Proceedings of Global/Top Fuel 2019*, pages 402–427, Seattle, WA, United States, Sept. 2019. American Nuclear Society. URL: <http://epubs.ans.org/?a=46950>
- [34] S. M. Park, A. Rykhlevskii, and **K. Huff**. Safety Analysis of the Molten Salt Fast Reactor Fuel Composition using Moltres. In *Proceedings of GLOBAL International Fuel Cycle Conference*, Seattle, WA, United States, Sept. 2019. American Nuclear Society. URL: <http://epubs.ans.org/?a=47030>, doi:[10.31224/osf.io/7ce89](https://doi.org/10.31224/osf.io/7ce89)
- [35] A. Rykhlevskii, B. R. Betzler, A. Worrall, and **K. D. Huff**. Fuel Cycle Performance of Fast Spectrum Molten Salt Reactor Designs. In *Proceedings of Mathematics and Computation 2019*, pages 342–353, Portland, OR, Aug. 2019. American Nuclear Society. URL: <http://epubs.ans.org/?a=46618>
- [36] G. Westphal and **K. Huff**. PyRe: A Cyclus Pyroprocessing Facility Archetype. In *Proceedings of the 2018 Advances in Nuclear Nonproliferation Technology and Policy Conference*, pages 73–76, Orlando, FL, Nov. 2018. American Nuclear Society. URL: <http://epubs.ans.org/?a=44666>
- [37] A. Smith, L. A. Barba, G. Githinji, M. Gymrek, **K. Huff**, D. S. Katz, C. Madan, A. C. Mayes, K. M. Moerman, K. Niemeyer, P. Prins, K. Ram, A. Rokem, T. Teal, R. Valls Guimera, and J. T. Vanderplas. Introducing JOSS: The Journal of Open Source Software. In *Proceedings of SciPy*, Austin, TX, United States, July 2017. SciPy. 10.6084/m9.figshare.5208151.v1. doi:[10.6084/m9.figshare.5208151.v1](https://doi.org/10.6084/m9.figshare.5208151.v1)

- [38] A. Smith, L. A. Barba, G. Githinji, M. Gymrek, **K. Huff**, D. S. Katz, C. Madan, A. C. Mayes, K. M. Moerman, K. Niemeyer, P. Prins, K. Ram, A. Rokem, T. Teal, and J. Vanderplas. The Journal of Open Source Software. In *Poster*, volume Computational Science and Engineering, Atlanta, GA, Feb. 2017. Society for Industrial and Applied Mathematics. URL: https://figshare.com/articles/The_Journal_of_Open_Source_Software/4688911, doi:10.6084/m9.figshare.4688911.v1
- [39] **K. D. Huff**, J. W. Bae, K. A. Mummah, R. R. Flanagan, and A. M. Scopatz. Current Status of Predictive Transition Capability in Fuel Cycle Simulation. In *Proceedings of Global 2017*, Seoul, South Korea, Sept. 2017. American Nuclear Society. URL: <https://books.google.com/books/about/GLOBAL.2017.html?id=1UjsuQEACAAJ>
- [40] J. W. Bae, W. Roy, and **K. D. Huff**. Benefits of Siting a Borehole Repository at a Non-operating Nuclear Facility. In *Proceedings of the International High Level Radioactive Waste Management Conference*, pages 876–883, Charlotte, North Carolina, Apr. 2017. American Nuclear Society. URL: <http://epubs.ans.org/?a=43329>
- [41] X. Wang, **K. D. Huff**, M. Aufiero, P. F. Peterson, and M. Fratoni. Coupled Reactor Kinetics and Heat Transfer Model for Fluoride Salt-Cooled High-Temperature Reactor Transient Analysis. In *Proceedings of ICONE 2016*, Charlotte, North Carolina, June 2016. JC0003. URL: <http://dx.doi.org/10.1115/ICONE24-60728>, doi:10.1115/ICONE24-60728
- [42] X. Wang, **K. D. Huff**, M. Aufiero, P. F. Peterson, and M. Fratoni. A Sensitivity Study of a Coupled Kinetics and Thermal-Hydraulics Model for Fluoride-Salt-Cooled, High-Temperature Reactor (FHR) Transient Analysis. In *Proceedings of ICAPP 2016*, page Paper 16555, San Francisco, CA, Apr. 2016. International Congress on Advances in Nuclear Power Plants. URL: icapp.ans.org
- [43] D. Djokic, A. M. Scopatz, H. R. Greenberg, **K. D. Huff**, R. P. Nibbelink, and M. Fratoni. The Application of CYCLUS to Fuel Cycle Transition Analysis. In *Proceedings of Global 2015*, LLNL-CONF-669315, Paris, France, Sept. 2015. URL: <https://www.osti.gov/biblio/1241931-application-cyclus-fuel-cycle-transition-analysis>
- [44] **K. Huff**. PyRK: A Python Package For Nuclear Reactor Kinetics. In *Proceedings of the 14th Python in Science Conference*, pages 87–93, Austin, TX, United States, 2015. SciPy. URL: http://conference.scipy.org/proceedings/scipy2015/kathryn_huff.html, doi:10.25080/Majora-7b98e3ed-00d
- [45] D. L. Krumwiede, C. Andreades, J. Choi, A. Cisneros, L. Huddar, **K. D. Huff**, M. Laufer, M. Munk, R. O. Scarlat, J. E. Seifried, N. Zwiebaum, E. Greenspan, and P. F. Peterson. Design of the Mark-1 Pebble-Bed, Fluoride-Salt-Cooled, High-Temperature Reactor Commercial Power Plant. In *Proceedings of ICAPP*, volume 1, Charlotte, North Carolina, 2014. American Nuclear Society. URL: <https://api.semanticscholar.org/CorpusID:30717062>
- [46] **K. D. Huff**. Cyclus Fuel Cycle Simulation Capabilities with the Cyder Disposal System Model. In *Proceedings of GLOBAL 2013: International Nuclear Fuel Cycle Conference-Nuclear Energy at a Crossroads*, volume 45 of *Nuclear Fuel Cycle and Fuel Materials*, Salt Lake City, UT, United States, Oct. 2013. URL: https://inis.iaea.org/search/search.aspx?orig_q=RN:45085412
- [47] M. Gidden, P. Wilson, **K. D. Huff**, and R. W. Carlsen. An Agent-Based Framework for Fuel Cycle Simulation with Recycling. In *Proceedings of GLOBAL*, volume 45 of *Nuclear Fuel Cycle and Fuel Materials*, Salt Lake City, UT, United States, Sept. 2013. URL: https://inis.iaea.org/search/search.aspx?orig_q=RN:45085433
- [48] **K. D. Huff**. Hydrologic Nuclide Transport Models in Cyder, a Geologic Disposal Software Library. In *WM2013*, Phoenix, AZ, Feb. 2013. Waste Management Symposium. URL: https://inis.iaea.org/search/search.aspx?orig_q=RN:45042278
- [49] **K. D. Huff**. Cyclus: An Open, Modular, Next Generation Fuel Cycle Simulator Platform (poster). In *Proceedings of the Waste Management Symposium*, Phoenix, AZ, Mar. 2011
- [50] K. M. Oliver, P. P. Wilson, A. Reveillere, T. W. Ahn, K. Dunn, **K. D. Huff**, and R. A. Elmore. Studying international fuel cycle robustness with the GENIUSv2 discrete facilities/materials fuel cycle systems analysis tool. In *Proceedings of GLOBAL 2009*, GLOBAL 2009: Advanced Nuclear Fuel Cycles and Systems, Paris, France, Sept. 2009. URL: <https://sfen.fr/GLOBAL-2009>

- [51] N. Mujica, M. Clerc, P. Cordero, J. Dunstan, **K. D. Huff**, L. Oyarte, R. Soto, G. Varas, and D. Risso. Solid-liquid-like transition in vibrated granular monolayers. In *APS Division of Fluid Dynamics Meeting Abstracts*, Nov. 2008. URL: <http://adsabs.harvard.edu/abs/2008APS..DFD.HM008M>
- [52] D. Rochman, R. C. Haight, S. A. Wender, J. M. O'Donnell, A. Michaudon, **K. D. Huff**, D. J. Vieira, E. Bond, R. S. Rundberg, A. Kronenberg, J. Wilhelmy, T. A. Bredeweg, J. Schwantes, T. Ethvignot, T. Granier, M. Petit, and Y. Danon. First Measurements with a Lead Slowing-Down Spectrometer at LANSCE. In *Proceedings of the International Conference on Nuclear Data for Science and Technology*, volume 769, pages 736–739, May 2005. URL: <http://adsabs.harvard.edu/abs/2005AIPC..769..736R>, doi:10.1063/1.1945112
- [53] S. M. Park and **K. D. Huff**. Multiphysics Benchmark Results from Moltres. In *Proceedings of the 2021 ANS Virtual Annual Meeting*, Reactor Analysis Methods - I, Virtual Meeting, June 2021. American Nuclear Society. (Submitted before May 2021). URL: <https://www.ans.org/meetings/am2021/session/view-587/>
- [54] A. M. Bachmann and **K. D. Huff**. Enriched Uranium Supply Requirements for the Transition to Advanced Reactors. In *Proceedings of the American Nuclear Society 2021 National Student Conference*, Virtual, Apr. 2021
- [55] R. Fairhurst Agosta, S. Dotson, and **K. Huff**. Hydrogen Economy in Champaign-Urbana, IL. In *Transactions of the American Nuclear Society Annual Meeting*, volume 122 of *General Topics in Decommissioning*, Phoenix, AZ, June 2020. American Nuclear Society. URL: <http://epubs.ans.org/?a=48167>
- [56] S. G. Dotson and **K. D. Huff**. Echo State Networks for Renewable Energy Forecasting. In *Proceedings of the 2020 ANS Virtual Winter Meeting*, Operations and Power Division Hybrid and Integrated Energy Systems, Virtual Meeting, Nov. 2020. American Nuclear Society. URL: <https://www.ans.org/meetings/wm2020/session/view-235/>
- [57] M. Turkmen and **K. D. Huff**. Single Channel Design Based on Artificial Intelligence for Molten Salt Reactors. In *Transactions of the American Nuclear Society*, volume 122 of *Virtual Conference*, pages 712–713, Virtual Meeting, June 2020. American Nuclear Society. URL: <http://epubs.ans.org/?a=48340>
- [58] S. G. Dotson and **K. D. Huff**. Optimal Sizing of a Micro-reactor for Embedded Grid Systems. In *Transactions of the American Nuclear Society Annual Meeting*, volume 122 of *Reactor Physics of Micro Reactors for Terrestrial and Space Applications—II*, pages 682–685, Phoenix, AZ, June 2020. American Nuclear Society. URL: <https://youtu.be/Z36xWxW0FNk>, doi:<http://epubs.ans.org/?a=48333>
- [59] R. Fairhurst Agosta, S. Dotson, and **K. Huff**. Hydrogen Economy in Champaign-Urbana, IL. In *Transactions of the American Nuclear Society Student Conference*, Raleigh, NC, Mar. 2020. American Nuclear Society
- [60] A. Rykhlevskii, D. O'Grady, T. Kozlowski, and **K. D. Huff**. The Impact of Xenon-135 on Load Following Transatomic Power Molten Salt Reactor. In *Transactions of the American Nuclear Society*, volume 121, pages 1441–1444, Washington, DC, United States, Nov. 2019. American Nuclear Society. URL: <http://epubs.ans.org/?a=47853>
- [61] S. M. Park, A. Rykhlevskii, and **K. Huff**. Safety Analysis of the Molten Salt Fast Reactor Fuel Composition using Moltres. In *Proceedings of GLOBAL International Fuel Cycle Conference*, Seattle, WA, United States, Sept. 2019. American Nuclear Society. URL: <http://epubs.ans.org/?a=47030>, doi:10.31224/osf.io/7ce89
- [62] G. J. Chee and **K. D. Huff**. Simulation of Spent Nuclear Fuel loading into a Final Waste Repository. In *WM Symposia 2019 Proceedings*, Phoenix, AZ, Apr. 2019. Roy G. Post Foundation
- [63] G. Chee, J. W. Bae, **K. D. Huff**, R. R. Flanagan, and R. Fairhurst. Demonstration of Demand-Driven Deployment Capabilities in Cyclus. In *Proceedings of Global/Top Fuel 2019*, pages 394–401, Seattle, WA, United States, Sept. 2019. American Nuclear Society. URL: <http://epubs.ans.org/?a=46949>
- [64] A. Chaube, J. Stubbins, and **K. D. Huff**. Dynamic Transition Analysis with TIMES. In *I2CNER Annual Symposium*, Fukuoka, Japan, Feb. 2019. Kyushu University. (Presentation)

- [65] G. Westphal and **K. D. Huff**. Signatures and Observables in the Nuclear Fuel Cycle. In *CNEC Annual Workshop*, Raleigh, N.C., Feb. 2018. North Carolina State University. (Poster)
- [66] L. Kissinger. Simulating the Spent Fuel Recipe of a Sodium-Cooled Fast Reactor. In *Proceedings of the American Nuclear Society 2018 National Student Conference*, Gainesville, FL, United States, Apr. 2018. American Nuclear Society
- [67] M. Kamuda. A Comparison of Machine Learning Methods for Automated Gamma-Ray Spectroscopy, June 2018. URL: <http://arfc.github.io/pres/2018-06-13-SORMA.pdf>
- [68] G. Chee, G. Park, and **K. D. Huff**. Validation of Spent Nuclear Fuel Output by Cyclus, a Fuel Cycle Simulator Code. In *Proceedings of the American Nuclear Society Winter Meeting 2018*, volume 119, pages 219–222, Orlando, FL, Nov. 2018. American Nuclear Society. URL: <http://epubs.ans.org/?a=44198>
- [69] G. Chee, J. W. Bae, and **K. D. Huff**. Numerical Experiments for testing Demand-Driven Deployment Algorithms. In *Proceedings of the American Nuclear Society 2018 National Student Conference*, Gainesville, FL, United States, Apr. 2018. American Nuclear Society
- [70] A. Chaube, J. Stubbins, and **K. D. Huff**. Dynamic Transition Analysis with TIMES. In *I2CNER Annual Symposium*, Fukuoka, Japan, Jan. 2018. Kyushu University. (Poster)
- [71] J. W. Bae, P.-D. Joshua, and **K. D. Huff**. Impact of Composition Approximation on Simulated Nuclear Fuel Cycle Metrics, Nov. 2018. URL: <http://arfc.npre.illinois.edu/pres/2018-11-13-bae-answinter2018.pdf>
- [72] A. Rykhlevskii, A. Lindsay, and **K. D. Huff**. Online reprocessing simulation for thorium-fueled molten salt breeder reactor. In *Transactions of the American Nuclear Society*, volume 117 of *Molten Salt Processing-Online Processing Redox*, pages 239–242, Washington, DC, United States, Nov. 2017. American Nuclear Society. URL: <http://epubs.ans.org/?a=41258>
- [73] A. Rykhlevskii, A. Lindsay, and **K. D. Huff**. Full-core analysis of thorium-fueled Molten Salt Breeder Reactor using the SERPENT 2 Monte Carlo code. In *Transactions of the American Nuclear Society*, volume 117 of *Reactor Physics*, pages 1343–1346, Washington, DC, United States, Nov. 2017. American Nuclear Society. URL: <http://epubs.ans.org/?a=41596>
- [74] G. Ridley, A. Lindsay, and **K. Huff**. An Introduction to Moltres, an MSR Multiphysics Code. In *Transactions of the American Nuclear Society*, Washington D.C., Oct. 2017. American Nuclear Society. URL: <http://arfc.github.io/pres/2017-10-31-moltres.pdf>
- [75] J. W. Bae, **K. Huff**, and C. Singer. Synergistic Spent Nuclear Fuel Dynamics Within the European Union. In *Transactions of the American Nuclear Society Winter Conference*, volume 117 of *Fuel Cycle and Waste Management*, pages 261–265, Washington, D.C., Oct. 2017. American Nuclear Society. URL: <http://epubs.ans.org/?a=41265>
- [76] A. M. Scopatz and **K. D. Huff**. Modernizing Computational Nuclear Engineering Education in the Open. In *Transactions of the American Nuclear Society*, volume 113 of *Education and Training: General—II*, pages 111–114, Washington, D.C., Nov. 2015. URL: <http://epubs.ans.org/?a=37748>
- [77] **K. D. Huff**, M. Fratoni, and H. Greenberg. Extensions to the Cyclus Ecosystem In Support of Market-Driven Transition Capability. In *Transactions of the American Nuclear Society*, Fuel Cycle Options Analysis – III, pages 245–248, Anaheim, CA, United States, Nov. 2014. American Nuclear Society. LLNL-PROC-656426. URL: <http://epubs.ans.org/?a=36345>
- [78] C. Bates, E. D. Biondo, **K. D. Huff**, K. Kiesling, and A. M. Scopatz. PyNE Progress Report. In *Transactions of the American Nuclear Society*, volume 111, pages 1165–1168, Anaheim, CA, United States, Nov. 2014. American Nuclear Society. tex.ids: bates_pyne.2014. URL: <http://epubs.ans.org/?a=36617>
- [79] **K. D. Huff** and A. T. Bara. Dynamic Determination of Thermal Repository Capacity For Fuel Cycle Analysis. In *Transactions of the American Nuclear Society*, volume 108, pages 123–126, Atlanta, GA, United States, June 2013. American Nuclear Society. URL: <http://epubs.ans.org/?a=16524>

- [80] A. Scopatz, P. K. Romano, P. P. H. Wilson, and **K. D. Huff**. PyNE: Python for Nuclear Engineering. In *Proceedings of the American Nuclear Society Winter Conference*, volume 107 of *Reactor Physics: General—I*, pages 985–987, San Diego, CA, USA, Nov. 2012. American Nuclear Society. URL: <http://epubs.ans.org/?a=14978>
- [81] **K. Huff** and T. H. Bauer. Numerical Calibration of an Analytical Generic Nuclear Repository Heat Transfer Model. In *Transactions of the American Nuclear Society*, volume 106 of *Modeling and Simulation in the Fuel Cycle*, pages 260–263, Chicago, IL, United States, June 2012. American Nuclear Society, La Grange Park, IL 60526, United States. URL: <http://epubs.ans.org/?a=13699>
- [82] **K. D. Huff** and W. M. Nutt. Key Processes and Parameters in a Generic Clay Disposal System Model. In *Transactions of the American Nuclear Society*, volume 107 of *Environmental Sciences – General*, pages 208–211, San Diego, CA, Nov. 2012. American Nuclear Society. URL: <http://epubs.ans.org/?a=14711>
- [83] M. J. Gidden, P. P. Wilson, **K. D. Huff**, and R. W. Carlsen. Once-Through Benchmarks with CYCLUS, a Modular, Open-Source Fuel Cycle Simulator. In *Transactions of the American Nuclear Society*, volume 107 of *Nuclear Fuel Cycle Resources, Sustainability, Reuse, and Recycle*, pages 264–266, San Diego, CA, Nov. 2012. American Nuclear Society, La Grange Park, IL 60526, United States. URL: <http://epubs.ans.org/?a=14732>
- [84] **K. D. Huff**, A. Scopatz, N. Preston, and P. Wilson. Rapid Peer Education of a Computational Nuclear Engineering Skill Suite. In *Transactions of the American Nuclear Society*, volume 104 of *Training, Human Performance, and Work Force Development*, pages 103–104, Hollywood, FL, United States, June 2011. American Nuclear Society, La Grange Park, IL 60526, United States. URL: <http://epubs.ans.org/?a=11811>
- [85] **K. D. Huff**, P. P. Wilson, and M. J. Gidden. Open Architecture and Modular Paradigm of Cyclus, a Fuel Cycle Simulation Code. In *Transactions of the American Nuclear Society*, volume 104 of *Modeling and Simulation in Fuel Cycle Separations and Waste Form Development—II*, page 183, Hollywood, Florida, June 2011. American Nuclear Society. URL: <http://epubs.ans.org/?a=11853>
- [86] **K. D. Huff**. Cyclus: An Open, Modular, Next Generation Fuel Cycle Simulator Platform (poster). In *Proceedings of the Waste Management Symposium*, Phoenix, AZ, Mar. 2011
- [87] **K. D. Huff**, R. A. Elmore, K. M. Oliver, and P. P. Wilson. MOX Fuel Recipe Approximation Tests in GENIUSv2. In *Transactions of the American Nuclear Society Student Meeting*, Ypsilanti, MI, Apr. 2010
- [88] **K. D. Huff**, K. M. Oliver, P. P. Wilson, T. W. Ahn, K. Dunn, and R. Elmore. GENIUSv2 Discrete Facilities/Materials Modeling of International Fuel Cycle Robustness. In *Transactions of the American Nuclear Society*, volume 101 of *Nuclear Fuel Cycle Codes and Applications*, pages 239–240, Washington D.C., United States, Nov. 2009. American Nuclear Society. URL: <http://epubs.ans.org/?a=9912>
- [89] **K. D. Huff**, P. P. Wilson, and K. M. Oliver. GENIUS Version 2: Modeling the Worldwide Nuclear Fuel Cycle (poster). In *Proceedings of the eHub Conference*, University of Wisconsin, Madison, Nov. 2009
- [90] R. A. Elmore, K. M. Oliver, P. P. Wilson, T. W. Ahn, K. L. Dunn, and **K. D. Huff**. GENIUSv2 Recipe Approximation Methodology for Mixed-Oxide Fuel. In *Transactions of the American Nuclear Society*, volume 101 of *Nuclear Fuel Cycle Codes and Applications*, pages 241–242, Washington D.C., United States, Nov. 2009. URL: <http://epubs.ans.org/?a=9913>
- TESTIMONY
BEFORE
CONGRESS [91] **K. D. Huff**. Testimony of Dr. Kathryn Huff Assistant Secretary for Nuclear Energy U.S. Department of Energy Before the U.S. House Committee on Oversight and Accountability Subcommittee on Economic Growth, Energy Policy, and Regulatory Affairs U.S. House of Representatives, Jan. 2024. URL: <https://oversight.house.gov/hearing/he-next-generation-empowering-american-nuclear-energy/>
- [92] **K. D. Huff**. Testimony of Dr. Kathryn Huff Assistant Secretary for Nuclear Energy U.S. Department of Energy Before the U.S. Senate Committee on Energy and Natural Resources Full Committee Hearing to Examine the Nuclear Fuel Cycle, Mar. 2023. URL: <https://www.energy.senate.gov/hearings/2023/3/full-committee-hearing-to-examine-the-nuclear-fuel-cycle>

- [93] **K. D. Huff** and D. MacIntyre. Testimony of Dr. Kathryn Huff Assistant Secretary for Nuclear Energy and Douglas MacIntyre Deputy Director for the Office of Petroleum Reserves U.S. Department of Energy, Dec. 2022. URL: <https://www.energy.senate.gov/hearings/2022/12/full-committee-hearing-to-consider-pending-legislation>
- [94] **K. D. Huff**. Testimony and Questions for the Record of Dr. Kathryn Huff Acting Assistant Secretary for Nuclear Energy U.S. Department of Energy Before the U.S. Senate Committee on Energy and Natural Resources Hearing to Consider the Nomination of Dr. Kathryn Huff to be an Assistant Secretary of Energy for Nuclear Energy, Mar. 2022. URL: <https://www.energy.senate.gov/hearings/2022/3/hearing-to-consider-the-nomination-of-kathryn-huff-to-be-an-assistant-secretary-of-energy-for-nuclear-energy>
- [95] **K. D. Huff** and K. Speakes-Backman. Testimony of Dr. Kathryn Huff Assistant Secretary for Nuclear Energy and Ms. Kelly Speakes-Backman Principal Deputy Assistant Secretary for Energy Efficiency and Renewable Energy U.S. Department of Energy Before the Committee on Energy and Natural Resources U.S. Senate, July 2022. URL: <https://www.energy.senate.gov/hearings/2022/7/full-committee-hearing-to-consider-pending-legislation>
- [96] **K. D. Huff**. Testimony of Dr. Kathryn Huff Acting Assistant Secretary Office of Nuclear Energy U.S. Department of Energy on Judicious Spending to Enable Success at the Office of Nuclear Energy. U.S. House Committee on Science, Space, and Technology Subcommittee on Energy and Subcommittee on Investigations and Oversight. 117th Congress, Session 1., Oct. 2021. URL: <https://science.house.gov/2021/10/joint-investigations-oversight-and-energy-subcommittees-hearing-judicious>
- TECHNICAL
REPORTS
- [97] J. Chen, C. S. Brooks, A. Rykhlevskii, M. Türkmen, **K. D. Huff**, A. Lee, T. Kozlowski, Z. Li, B. J. Heuser, and J. F. Stubbins. Enabling Load Following Capability in the Transatomic Power MSR. Technical Report DOE-UIUC-0983-1, Univ. of Illinois at Urbana-Champaign, IL (United States); Idaho National Laboratory (INL), Idaho Falls, ID (United States), Dec. 2021. URL: <https://www.osti.gov/biblio/1877339>, doi:10.2172/1877339
- [98] M. Turkmen and J. Chen. Milestone 2.3 Report: SaltProc Sensitivity Analysis, Fuel processing system design. Milestone Report UIUC-ARFC-2021-01, University of Illinois at Urbana-Champaign, Urbana, IL, Mar. 2021
- [99] S. G. Dotson, A. M. Bachmann, Z. M. Richter, N. R. Panczyk, N. S. Ryan, A. C. Balla, and E. R. Fanning. Economic and Carbon Impacts of Potential Illinois Nuclear Plant Closures: The Cost of Closures. Technical Report UIUC-ARFC-2021-02, University of Illinois at Urbana-Champaign, Urbana, IL, May 2021. URL: github.com/arfc/2021-04-nm-illinois
- [100] A. J. Lee, T. Kozlowski, and **K. Huff**. Milestone 3.2 Report: Thermal-Hydraulics Analysis of Core LoadFollowing Operation. Milestone Report UIUC-ARTS-2020-08, University of Illinois at Urbana-Champaign, Urbana, IL, Aug. 2020
- [101] P. Sabharwall, N. Anderson, P. Marotta, and R. Christensen. MicroNuclear Battery Thermal and Fluid Analysis and Multiphysics Modeling Challenges. INL Limited Distribution INL/LTD-19-52963, Idaho National Laboratory, Idaho Falls, ID, Feb. 2019
- [102] A. Chaube, J. Stubbins, and **K. D. Huff**. Dynamic Transition Analysis with TIMES. In *I2CNER Annual Symposium*, Fukuoka, Japan, Feb. 2019. Kyushu University. (Presentation)
- [103] **K. D. Huff**. Identifying MSR Multiphysics Modeling Challenges. Technical Report UIUC-ARFC-2019-01, University of Illinois at Urbana-Champaign, Urbana, IL, Feb. 2019. URL: <https://zenodo.org/record/335456>, doi:10.5281/zenodo.3354563
- [104] G. Chee, R. Fairhurst, and **K. Huff**. Transition Scenario Demonstrations of CYCAMORE Demand Driven Deployment Capabilities. Technical Report UIUC-ARFC-2019-03, University of Illinois at Urbana-Champaign, Urbana, IL, June 2019. <https://zenodo.org/record/3354507>. URL: <https://zenodo.org/record/3354507>
- [105] **K. D. Huff**. Demand Driven Cycamore Archetypes FY16 NEUP Award Summary. In *Presentations in the DOE-NE Systems Analysis and Integration (SA&I) Campaign*, Argonne, IL, United States, Sept. 2019

- [106] A. Rykhlevskii and **K. Huff**. Milestone 2.1 Report: Demonstration of SaltProc. Milestone Report UIUC-ARFC-2019-04 DOI: 10.5281/zenodo.3355649, University of Illinois at Urbana-Champaign, Urbana, IL, June 2019. doi:10.5281/zenodo.3355649
- [107] J. W. Bae, G. Chee, and **K. Huff**. Numerical Experiments for Verifying Demand Driven Deployment Algorithms. Graduate Report UIUC-ARFC-2018-01, University of Illinois at Urbana-Champaign, Urbana, IL, Apr. 2018. URL: https://github.com/arfc/ddca_numerical_exp
- [108] A. L. Heald, E. Miernicki, R. E. Fairhurst, A. J. Margenot, **K. D. Huff**, and C. S. Brooks. Investigation of Agricultural Uses of Nuclear Waste Heat. UIUC Technical Report. October, 2018. UIUC Technical Report, University of Illinois at Urbana-Champaign, Urbana, IL, Oct. 2018
- [109] J. W. Bae and **K. D. Huff**. Non-algorithmic Capability Gaps for Cyclus and Cycamore transition analyses. Graduate Report UIUC-ARFC-2017-02, University of Illinois at Urbana-Champaign, Urbana, IL, Nov. 2017. URL: <https://github.com/arfc/transition-scenarios>, doi:10.5281/zenodo.1145439
- [110] **K. Huff** and A. Lindsay. Coupled Multi-Physics of Advanced Molten Salt Nuclear Reactors. Blue Waters Annual Report, National Center for Supercomputing Applications, 2017. URL: https://bluewaters.ncsa.illinois.edu/apps/docs/BW_AR.2017.linked.pdf
- [111] G. Ridley, A. Lindsay, M. Turk, and **K. Huff**. Multiphysics Analysis of Molten Salt Reactor Transients. Undergraduate Report UIUC-ARFC-2017-01, University of Illinois at Urbana-Champaign, Urbana, IL, Aug. 2017. DOI 10.5281/zenodo.1145437. URL: <https://github.com/arfc/publications/tree/2017-ridley-msrTransients>
- [112] A. Lindsay, A. Rykhlevskii, and **K. Huff**. Advanced Reactor Fuel Cycles Molten Salt Reactor Design. Technical Report, University of Illinois at Urbana-Champaign, Urbana, IL, Aug. 2016. URL: <https://github.com/arfc/MSR-design>
- [113] D. Djokic, A. M. Scopatz, H. R. Greenberg, **K. D. Huff**, R. P. Nibbelink, and M. Fratoni. The Application of CYCLUS to Fuel Cycle Transition Analysis. In *Proceedings of Global 2015*, LLNL-CONF-669315, Paris, France, Sept. 2015. URL: <https://www.osti.gov/biblio/1241931-application-cyclus-fuel-cycle-transition-analysis>
- [114] C. Andreades, A. Cisneros, J. Choi, A. Chong, D. L. Krumwiede, L. Huddar, **K. D. Huff**, M. Laufer, M. Munk, R. O. Scarlat, J. E. Seifried, N. Zwiebaum, E. Greenspan, and P. F. Peterson. Technical Description of the ‘Mark 1’ Pebble-Bed, Fluoride-Salt-Cooled, High-Temperature Reactor Power Plant. Thermal Hydraulics Group UCBTH-14-002, University of California, Berkeley, Department of Nuclear Engineering, Berkeley, CA, Sept. 2014
- [115] **K. D. Huff** and T. H. Bauer. Benchmarking a New Closed-Form Thermal Analysis Technique Against a Traditional Lumped Parameter, Finite-Difference Method. Technical Report FCRD-UFD-000142, Argonne National Laboratory, Argonne, IL, United States, July 2012
- [116] **K. D. Huff** and W. M. Nutt. FY12 Sensitivity Studies Using the UFD Clay Generic Disposal System Model. Technical Report FCRD-USED-2012-000141, Argonne National Laboratory (ANL), Argonne, IL, United States, July 2012
- [117] **K. Huff** and B. Dixon. Next Generation Fuel Cycle Simulator Functions and Requirements Document. Technical Report ferd-sysa-2010-000110, Idaho National Laboratory, July 2010
- [118] O. Biris, K. Gracey, **K. D. Huff**, and W. K. Ng. An Analysis of the Consolidated Fuel Treatment Center Nuclear Reprocessing Initiative. capstone report BP-EP-2008-07, University of Chicago, Chicago, IL, United States, June 2008. URL: <http://humanities.uchicago.edu/orgs/institute/bigproblems/Energy/BP-Energy-Reprocessing.doc>
- [119] **K. D. Huff**. Digital filtering applications to the lead slowing-down spectrometer. Technical Report 0, Los Alamos National Laboratory Report LA-UR-04-8757, 2004, Los Alamos, NM, United States, 2004
- [120] **K. D. Huff**. Excess Single Event Effects in the Second Chip of a Series. Technical Report 0, Los Alamos National Laboratory Report, Los Alamos, NM, United States, Aug. 2003

- OTHER PUBLICATIONS [121] **K. D. Huff**. *An Integrated Used Fuel Disposition and Generic Repository Model for Fuel Cycle Analysis*. PhD Dissertation, The University of Wisconsin - Madison, Oct. 2013. URL: <http://gradworks.umi.com/35/92/3592735.html>
- [122] **K. D. Huff**. *QUIET Celestial Gain Calibrations*. Undergraduate, University of Chicago, Chicago, IL, United States, May 2008. URL: kathyhuff.github.io/papers/CalibrationsThesis.pdf
- [123] O. Biris, K. Gracey, **K. D. Huff**, and W. K. Ng. An Analysis of the Consolidated Fuel Treatment Center Nuclear Reprocessing Initiative. capstone report BP-EP-2008-07, University of Chicago, Chicago, IL, United States, June 2008. URL: <http://humanities.uchicago.edu/orgs/institute/bigproblems/Energy/BP-Energy-Reprocessing.doc>
- SOFTWARE PRODUCTS [124] A. Anderson, A. Bachmann, J. W. Bae, A. Bhosale, L. Bormann, A. Caldwell-Overdier, S. Chandan, G. Chee, R. Flanagan, R. Hodge, **K. Huff**, K. Kleimenhagen, D. Krueger, M. McGarry, B. Mougnot, K. Mummah, B. Nibbelink, G. Park, E. Redfoot, Y. Robert, M. Schalz, A. Scopatz, J. Stomps, D. Wang, and P. Wilson. Cyclus v1.6.0. *Figshare*, May 2024. URL: https://figshare.com/articles/software/Cyclus_v1.6.0/25752558, doi:10.6084/m9.figshare.25752558.v1
- [125] S. M. Park, M. Munk, and **K. D. Huff**. Results from Moltres for the CNRS Benchmark, Sept. 2021. URL: <https://zenodo.org/record/5534964>, doi:10.5281/zenodo.5534964
- [126] A. Chaube, D. O’Grady, A. Rykhlevskii, and **K. D. Huff**. TAP MSR model for Serpent 2. *Zenodo*, 2019. doi:10.5281/zenodo.1450733
- [127] G. J. Chee, J. W. Bae, R. Fairhurst, R. R. Flanagan, and A. M. Scopatz. arfc/d3ploy: A collection of Cyclus manager archetypes for demand driven deployment, Sept. 2019. 10.5281/zenodo.3464123. URL: <https://github.com/arfc/d3ploy>
- [128] G. Chee, G. Westphal, and **K. Huff**. arfc/dcwrapper : Gwen’s MS Thesis Release, 2019. doi:10.5281/zenodo.3530964
- [129] J. W. Bae, G. Park, G. Chee, **K. Huff**, T. Kennelly, P. Speaks, P. Wilson, and A. Scopatz. arfc/transition-scenarios: Standardized Verification of the Cyclus Fuel Cycle Simulator. *Zenodo*, GitHub, Sept. 2018. doi:10.5281/zenodo.1419110
- [130] J. W. Bae, G. T. Park, **K. Huff**, and G. Chee. arfc/transition-scenarios: Synergistic Spent Nuclear Fuel Dynamics Within the European Union v2.0.0. *Zenodo*, Mar. 2018. doi:10.5281/zenodo.1210302
- [131] A. Chaube and **K. Huff**. i2cner: Holds software, notes, documentation, and publications related to the ARFC I2CNER project on dynamic energy systems analysis, Jan. 2018. original-date: 2017-11-22T19:29:40Z. URL: <https://github.com/arfc/i2cner>
- [132] A. Rykhlevskii, J. W. Bae, and **K. Huff**. arfc/saltproc: Code for online reprocessing simulation of molten salt reactor with external depletion solver SERPENT. *Zenodo*, July 2018. doi:10.5281/zenodo.1306628
- [133] A. Lindsay, **K. Huff**, and A. Rykhlevskii. arfc/moltres: Initial Moltres release. *Zenodo*, June 2017. doi:10.5281/zenodo.801823
- [134] R. W. Carlsen, M. Gidden, **K. Huff**, A. C. Opotowsky, O. Rakhimov, A. M. Scopatz, and P. Wilson. Cycamore v1.0.0. *Figshare*, June 2014. http://figshare.com/articles/Cycamore_v1.0.0/1041829. URL: http://figshare.com/articles/Cycamore_v1.0.0/1041829, doi:http://figshare.com/articles/Cycamore_v1.0.0/1041829
- [135] R. W. Carlsen, M. Gidden, **K. Huff**, A. C. Opotowsky, O. Rakhimov, A. M. Scopatz, Z. Welch, and P. Wilson. Cyclus v1.0.0. *Figshare*, June 2014. doi:10.6084/m9.figshare.1041745

- [136] D. Moore. Biden Official Presses Congress for Uranium Enrichment Funding. *Bloomberg Law*, Environment and Energy, Jan. 2024. URL: <https://news.bloomberglaw.com/environment-and-energy/biden-official-presses-congress-for-uranium-enrichment-funding>
- [137] A. Brown. Federal money could supercharge state efforts to preserve nuclear power, Feb. 2024. URL: <https://stateline.org/2024/02/12/federal-money-could-supercharge-state-efforts-to-preserve-nuclear-power/>
- [138] **K. Huff**. Farewell Interview: Assistant Secretary for Nuclear Energy Katy Huff, May 2024. URL: <https://www.energy.gov/ne/articles/farewell-interview-assistant-secretary-nuclear-energy-katy-huff>
- [139] N. Portuondo. Top DOE nuclear energy official heads for the exit. *E&E News by POLITICO*, Apr. 2024. URL: <https://www.eenews.net/articles/top-doe-nuclear-energy-official-heads-for-the-exit/>
- [140] S. Wolfe. Top U.S. nuclear energy official to step down, Apr. 2024. URL: <https://www.power-eng.com/nuclear/top-u-s-nuclear-energy-official-to-step-down/>
- [141] D. Leone. Huff to leave Department of Energy May 3. *ExchangeMonitor: RadWaste Monitor*, 17(16), Apr. 2024. URL: <https://live-exchangemonitor.pantheonsite.io/huff-to-leave-department-of-energy-may-3-2/>
- [142] S. Smith. A Nuclear Comeback: Are New Reactors the Answer?, Mar. 2024. media. URL: <https://a16z.com/podcast/a-nuclear-comeback-are-new-reactors-the-answer/>
- [143] R. Vakarelska. US / Officials Say Government Needs To Take Heat Off First-Of-Kind SMR, Feb. 2024. URL: <https://www.nucnet.org/news/officials-say-government-needs-to-take-heat-off-first-of-kind-smr-2-2-2024>
- [144] A. Shaw. US ready to replace Russian uranium imports, official says, May 2024. media. URL: <https://www.power-technology.com/news/us-ready-to-replace-russian-uranium-following-ban/>
- [145] TASS. Russia bans entry to 227 US citizens involved in Washington’s Russophobic agenda — MFA, Mar. 2024. URL: <https://tass.com/politics/1759515>
- [146] M. Abrams. Does the S Still Stand for Small? *Mechanical Engineering*, 146(1):30–35, Jan. 2024. doi:10.1115/1.2024-Jan4
- [147] S. Tinker. Energy Switch | Nuclear Waste | Season 3 | Episode 1 | PBS, Oct. 2023. URL: <https://www.pbs.org/video/nuclear-waste-h5oay7/>
- [148] B. Rivers. Another delay at plant Vogtle; New Jacksonville history podcast; Jax PBS Kids Writers Contest, Feb. 2023. media. URL: <https://news.wjct.org/show/first-coast-connect-with-melissa-ross/2023-02-23/first-coast-connect-plant-vogtle-bygone-jax-podcast>
- [149] D. Gearino. Meet the Millennial Scientist Leading the Biden Administration’s Push for a Nuclear Power Revival. *Inside Climate News*, Inside Clean Energy(February 2023), Feb. 2023. (Republished at Fast Company as ”This 36-year-old scientist is leading the Biden administration’s push for nuclear power”). URL: <https://insideclimatenews.org/news/16022023/inside-clean-energy-kathryn-huff-nuclear-energy/>
- [150] D. Hsu. Uncommon Interview: Assistant Secretary for the Office of Nuclear Energy Dr. Kathryn Huff. *Chicago Maroon*, Oct. 2023. Section: News. URL: <https://chicagomaroon.com/40245/news/uncommon-interview-assistant-secretary-for-the-office-of-nuclear-energy-dr-kathryn-huff/>
- [151] G. Edwards. Top U.S. nuclear energy official speaks with Missouri S&T community, Oct. 2023. Section: College of Engineering and Computing. URL: <https://news.mst.edu/2023/10/top-u-s-nuclear-energy-official-speaks-with-missouri-st-community/>
- [152] OECD-NEA. Nuclear Energy Agency welcomes Assistant Secretary Huff’s announcement on the United States’ decision to join the NEA Data Bank, Aug. 2023. URL: https://www.oecd-nea.org/jcms/pl_84133/nuclear-energy-agency-welcomes-assistant-secretary-huff-s-announcement-on-the-united-states-decision-to-join-the-nea-data-bank
- [153] R. Nelson. DOE looking to lease INL land to private developers for clean energy projects. *East Idaho News*, Oct. 2023. URL: <https://www.eastidahonews.com/2023/10/doe-looking-to-lease-inl-land-to-private-developers-for-clean-energy-projects/>

- [154] D. Dalton. Cop28 / Sapporo 5 Leaders Announce \$4.2 Billion Investment In Uranium Market ‘Free From Russian Influence’, Dec. 2023. URL: <https://www.nucnet.org/news/sapporo-5-leaders-announce-usd4-2-billion-investment-in-uranium-market-free-from-russian-influence-12-4-2023>
- [155] OECD-NEA. Focusing on the clean energy transition through a youth lens at CEM14, July 2023. URL: https://www.oecd-nea.org/jcms/pl_83770/focusing-on-the-clean-energy-transition-through-a-youth-lens-at-cem14
- [156] N. Bulowski. Canada and U.S. team up to tackle nuclear waste. *Canada’s National Observer*, May 2023. Section: News. URL: <https://www.nationalobserver.com/2023/05/17/news/canada-us-team-tackle-nuclear-waste>
- [157] H. Khatib. US Department of Energy representative visits Barakah Nuclear Energy Plant, May 2023. URL: <https://economymiddleeast.com/news/barakah-nuclear-energy-plant/>
- [158] B. Dabbs, H. Richards, and M. Willson. People to watch at DOE, Interior, FERC. *E&E News by POLITICO EnergyWire*, Feb. 2023. URL: <https://www.eenews.net/articles/people-to-watch-at-doe-interior-ferc/>
- [159] T. Honney. Finland and US increase nuclear co-operation, May 2023. URL: <https://www.neimagazine.com/news/finland-and-us-increase-nuclear-co-operation-10842419/>
- [160] R. Rapier. Ensuring A Safe Future For Nuclear Power. *Forbes*, Sept. 2022. Section: Energy. URL: <https://www.forbes.com/sites/rrapier/2022/09/12/ensuring-a-safe-future-for-nuclear-power/>
- [161] R. Rapier. Nuclear Waste And The Path Forward. *Forbes*, Sept. 2022. Section: Energy. URL: <https://www.forbes.com/sites/rrapier/2022/09/22/nuclear-waste-and-the-path-forward/>
- [162] R. Rapier. The World Won’t Get To Net Zero Emissions Without Nuclear Power. *Forbes*, Aug. 2022. Section: Energy. URL: <https://www.forbes.com/sites/rrapier/2022/08/31/the-world-wont-get-to-net-zero-emissions-without-nuclear-power/>
- [163] B. Weiss. ‘An arrow in our quiver:’ 15 minutes with Dr. Kathryn Huff, Assistant Secretary of Energy for Nuclear Energy. *ExchangeMonitor: RadWaste Monitor*, 15(22), June 2022. media. URL: <https://www.exchangemonitor.com/an-arrow-in-our-quiver-15-minutes-with-dr-kathryn-huff-assistant-secretary-of-energy-for-nuclear-energy/>
- [164] K. Drelich. Federal energy officials visit Waterford to discuss nuclear storage efforts. *The Day*, Dec. 2022. Publication Title: Day, The (New London, CT)
- [165] Leila Fadel. What role does nuclear power play in the U.S. effort to cut greenhouse gas emissions?, Nov. 2022. Publisher: National Public Radio, Inc. URL: <https://www.npr.org/2022/11/11/1135984019/what-role-does-nuclear-power-play-in-the-u-s-effort-to-cut-greenhouse-gas-emissions>
- [166] ExchangeMonitor. Biden admin sends NE-1 nom Huff to Senate, Feb. 2022. URL: <https://www.exchangemonitor.com/biden-admin-sends-ne-1-nom-huff-to-senate/>
- [167] E. H. Mahoney. U.S. nuclear chief details plans to find disposal site for spent CT nuclear waste. *Hartford Courant*, Dec. 2022. URL: <https://www.courant.com/2022/12/20/us-nuclear-energy-chief-details-plans-to-find-storage-sites-for-spent-ct-nuclear-waste/>
- [168] J. V. Taylor. The Clean Factor: Part One of a Tomorrow’s World Today Four Part Exploration, Oct. 2021. URL: <https://www.tomorrowstoday.com/videos/s4e08-the-clean-factor/>
- [169] N. . Staff. Science community comes to defense of student who brought uranium plate to school, Jan. 2021. URL: <https://newjersey.news12.com/science-community-comes-to-defense-of-student-who-brought-uranium-plate-to-school>
- [170] E. Clay. Four-Part Nuclear Energy Showcase on Tomorrow’s World Today Begins Saturday, October 23, Oct. 2021. URL: <https://www.newswire.com/news/four-part-nuclear-energy-showcase-on-tomorrows-world-today-begins-21531205>
- [171] Argonne Internal Channel. Argonne 75th Anniversary Congratulatory Message from Kathryn Huff, Principal Deputy Assistant Secretary for Nuclear Energy, U.S. Department of Energy, June 2021. <https://www.anl.gov/75th-anniversary/Congratulatory-Messages>. URL: https://www.youtube.com/watch?v=9xQxoUTA_2w

- [172] DOE. Q&A: Acting Assistant Secretary Dr. Kathryn Huff Shares Her Vision for the Future of Nuclear Energy, June 2021. URL: <https://www.energy.gov/ne/articles/qa-acting-assistant-secretary-dr-kathryn-huff-shares-her-vision-future-nuclear-energy>
- [173] A. Curtis. Maine's nuclear waste could find a home if communities volunteer to take it. *Bangor Daily News*, Nov. 2021. Publication Title: Bangor Daily News (ME). URL: <http://www.bangordailynews.com/2021/11/30/news/midcoast/maines-nuclear-waste-could-find-a-home-if-communities-volunteer-to-take-it/>
- [174] S. Forrest. U of I engineering professor appointed to US Department of Energy leadership role, May 2021. URL: <https://news.illinois.edu/view/6367/1199806555>
- [175] U. S. M. Romania. Acting Assistant Secretary for Nuclear Energy Huff's Trip to Romania, July 2021. media. URL: <https://ro.usembassy.gov/acting-assistant-secretary-for-nuclear-energy-huffs-trip-to-romania/>
- [176] J. D'Alessio. Photo Gallery: 143 masked Illini past and present (Part 6). *The News-Gazette*, page 120, Mar. 2021. URL: https://www.news-gazette.com/coronavirus/photo-gallery-143-masked-illini-past-and-present-part-6/collection_f3c17cbc-b770-5f16-87de-2c3eea3e4309.html
- [177] C. Delbert. Tiny Nuclear Reactors Can Save American Energy. *Popular Mechanics*, 2021(January/February), Jan. 2021. Section: Energy. URL: <https://www.popularmechanics.com/science/energy/a34976294/tiny-nuclear-reactors/>
- [178] E. White and C. White. 331: Friendly Tea Kettle, May 2020. media. URL: <https://embedded.fm/episodes/331>
- [179] L. Bushak. University Of Illinois Proposes Micronuclear Reactor To Cut Carbon Emissions -, Sept. 2020. media. URL: <https://illinoisnewsroom.org/university-of-illinois-proposes-micronuclear-reactor-to-cut-carbon-emissions/>
- [180] R. Adams. Atomic Show #285 - MMR at Illinois - Atomic Insights, Nov. 2020. URL: <https://atomicinsights.com/atomic-show-285-mmr-at-illinois/>
- [181] ANS. A Day in the Life of the Nuclear Community. *Nuclear News*, 63(12):23–37, Nov. 2020. media. URL: <https://www.ans.org/pubs/magazines/download/article-1221/>
- [182] H. Robinson. University awaits approval for on-campus micro-nuclear reactor. *The Daily Illini - The Independent Student Newspaper at the University of Illinois*, Sept. 2020. media. URL: <https://dailyillini.com/news/2020/09/14/university-awaits-approval-for-micronuclear-reactor/>
- [183] L. Bushak. University Of Illinois Proposes Micronuclear Reactor To Cut Carbon Emissions -, Sept. 2020. media. URL: <https://illinoisnewsroom.org/university-of-illinois-proposes-micronuclear-reactor-to-cut-carbon-emissions/>
- [184] D. Anghel. Krannert exhibit raises awareness of nuclear industry. *The Daily Illini - The Independent Student Newspaper at the University of Illinois*, Oct. 2019. media. URL: <https://dailyillini.com/news/2019/10/24/krannert-nuclear-industry/>
- [185] J. C. Hu. Someday the U.S. Will Have to Actually Deal With Its Nuclear Waste Problem. *Slate Magazine*, Technology, June 2019. media. URL: <https://slate.com/technology/2019/06/department-of-energy-nuclear-waste-reclassification-yucca.html>
- [186] B. Kugelmass. Katy Huff, University of Illinois on Apple Podcasts, Apr. 2019. media. URL: <https://www.titansofnuclear.com/katyhuff>
- [187] R. Letzter. When Chernobyl Blew, They Dumped Boron and Sand into the Breach. What Would We Do Today? *Live Science*, May 2019. media. URL: <https://www.livescience.com/65515-chernobyl-in-modern-times-nuclear-emergency.html>
- [188] H. Bowne-Anderson. Data Science, Nuclear Engineering and the Open Source (with Katy Huff), Mar. 2018. media. URL: <https://www.datacamp.com/community/podcast/data-science-nuclear-engineering>

- [189] A. Silver. Microsoft’s purchase of GitHub leaves some scientists uneasy. *Nature*, 558:353, June 2018. media. URL: <http://www.nature.com/articles/d41586-018-05426-0>, doi:doi:10.1038/d41586-018-05426-0
- [190] M. Timmins. Power Source: Nuclear engineer Katy Huff on teaching with IPython, reactor theory and the future of energy. *University of Illinois Alumni Magazine*, [InClass] Engineering(Summer 2018):13, Aug. 2018. media. URL: <https://illinoisalumni.org/2018/08/01/in-class-power-source/>
- [191] S. Hawksworth. Nuclear Engineering Programs with Dr. Kathryn Huff, Feb. 2018. media. URL: <https://yescollege.com/episode/kathryn-huff/>
- [192] **K. Huff**. Creating a Carbon Free Future, Alumni Spotlight: Kathryn Huff, Ph.D., Aug. 2018. media. URL: <http://tams.unt.edu/alumni/spotlights/kathryn-huff-phd>
- [193] H. Larsen. California Faculty Field Day. *Sandia National Laboratory LabNews*, page 8, July 2018. media. URL: http://www.sandia.gov/news/publications/labnews/_assets/documents/issues/2018/labnews07-06-18.pdf
- [194] S. Mumm. NPRE researchers to investigate load-following capabilities for molten salt reactors | NPRE Illinois, June 2018. media. URL: <https://npre.illinois.edu/news/npre-researchers-investigate-load-following-capabilities-molten-salt-reactors>
- [195] S. Mumm. Professor Kathryn Huff on the Possibilities in NPRE, Mar. 2018. media. URL: https://www.youtube.com/watch?v=w9d_QMW1hA4
- [196] K. Schuler. ANS Annual Meeting: Education, Training, and Workforce Development: Transitioning to the workforce. *Nuclear News*, 60(9):127–128, Aug. 2017. media. URL: <http://epubs.ans.org/download/?i=2141>
- [197] J. Bohannon. Female engineers publish in better journals, but receive fewer citations. *Science | AAAS, Scientific Community*(doi:10.1126/science.aae0191), Jan. 2016. media. URL: <https://www.sciencemag.org/news/2016/01/female-engineers-publish-better-journals-receive-fewer-citations>
- [198] J. Perkel. Democratic databases: science on GitHub. *Nature News*, 538(7623):127, Oct. 2016. media. URL: <http://www.nature.com/news/democratic-databases-science-on-github-1.20719>, doi: 10.1038/538127a
- [199] J. Lowery. Women in Data Science: Kathryn Huff, Sept. 2015. media. URL: <https://cds.nyu.edu/women-data-science-kathryn-huff/>
- [200] S. Tippmann. My digital toolbox: Nuclear engineer Katy Huff on version-control systems. *Nature News*, Sept. 2014. media. URL: <http://www.nature.com/news/my-digital-toolbox-nuclear-engineer-katy-huff-on-version-control-systems-1.16014>, doi: 10.1038/nature.2014.16014

INVITED
TALKS

Hundreds of Invited Talks as Assistant Secretary , <i>section to be updated.</i>	2021-2024
Oregon State Univ. , Dept. of Nuclear Science and Engineering, <i>Seminar.</i>	May 13, 2021
American Nuclear Society , NPT at 50 Years Webinar <i>Invited Panelist.</i>	Feb 15, 2021
U.C. Berkeley , Nuclear Engineering <i>Colloquium.</i>	Jan 22, 2021
GAIN-EPRI-NEI , Microreactor Program Virtual Workshop, <i>Invited Panelist.</i>	Aug 19, 2020
Society of Women Engineers , Graduate Community Virtual <i>Seminar.</i>	May 20, 2020
SIAM CSE 2019 , Spokane, WA, <i>Invited Minisymposium Speaker</i>	Feb 25, 2019
SciFOO , Google X, <i>Invited Camper.</i>	Jun 23, 2018
U. Illinois , Hack Illinois, <i>Keynote.</i>	Feb 24, 2018
U. Michigan , Nuclear Engineering and Radiological Sciences <i>Seminar.</i>	Feb 9, 2018
PyData , Meetup, Ann Arbor, MI <i>Invited Tech. Talk.</i>	Feb 8, 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 , Young Members Group, Workforce Transition, <i>Panel.</i>	Jun 13, 2017
ANS Annual , Mathematics and Computation Division, Current Issues, <i>Panel.</i>	Jun 12, 2017
Oak Ridge National Laboratory , RPNSD, <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, *Seminar*. Feb 2, 2017
U. Illinois, AE3 Lightning Symposium, *Lightning Talk*. Mar 2, 2017
U. Illinois, Nuclear, Plasma, & Radiological Engineering, *Undergraduate Seminar*. Feb 14, 2017
U. California, Berkeley, Berkeley Institute for Data Science, *Symposium*. Jan 27, 2017
U. Illinois, Informatics, *Seminar*. Oct 13, 2016
PyData 2016, Chicago, IL. *Keynote*. Aug 27, 2016
Oak Ridge National Laboratory, RPNDS, *Seminar*. Mar 3, 2016
U. Tennessee, Knoxville, Nuclear Engineering, *Seminar*. Mar 2, 2016
Michigan State, Computational, Mathematics, Science, and Engineering, *Seminar*. Dec 15, 2015
U. Illinois, Nuclear, Plasma, & Radiological Engineering, *Seminar*. Dec 8, 2015
SC15, Austin TX, Python in High Performance Computing workshop, *Keynote*. Nov 15, 2015
U. Illinois, National Center for Supercomputing Applications, *Colloquium*. Nov 6, 2015
North Carolina State University, Nuclear Engineering, *Colloquium*. Oct 15, 2015
Texas A&M University, Nuclear Engineering, *Colloquium*. Sep 29, 2015
Rensselaer Polytechnic Inst, Mechanical and Nuclear Engineering, *Colloquium*. Sep 21, 2015
U. Washington, What Can Academia Learn from Open Source?, *Panel*. Feb 2, 2015

ENGINEERING
TEACHING

University of Illinois at Urbana-Champaign
 DEPT. OF NUCLEAR, PLASMA, AND RADIOLOGICAL ENGINEERING
NPRE 247, Modeling Nuclear Energy Systems Fall 2018

NPRE 412, Nuclear Power Economics and Fuel Management Fall 2016
 Fall 2017
 Spring 2020
 Spring 2021

NPRE 446, Radiation Interactions with Matter I Fall 2019

NPRE 555, Reactor Theory I Spring 2018
 Fall 2020

NPRE 560, Reactor Kinetics and Dynamics Spring 2019

GUEST
LECTURES

University of California, Berkeley, DEPT. OF NUCLEAR ENGINEERING Nov 10, 2020
NE 100, Introduction to Nuclear Engineering
 Nuclear Fuel Cycle, Advanced Reactors

University of California, Berkeley, DEPT. OF NUCLEAR ENGINEERING Apr 1,3,22, 2015
NE 155, Introduction to Numerical Simulations in Radiation Transport Point Reactor Kinetics, Monte Carlo Methods

University of California, Berkeley, DEPT. OF NUCLEAR ENGINEERING Sep 11, 2014
NE 255, Numerical Simulation in Radiation Transport
 Best Practices in Computational Nuclear Engineering

University of Wisconsin - Madison, DEPT. OF NUCLEAR ENGINEERING Apr 1&3, 2013
NE 571, Economic and Environmental Aspects of Nuclear Energy
 Nuclear Waste Repository Technology, Policy, and History

University of Wisconsin - Madison, DEPT. OF NUCLEAR ENGINEERING Sep 9&11, 2009
NE 406, Nuclear Reactor Analysis
 UNIX Shell, Basic Scripting, Environment Variables, Permissions, Regular Expressions, Makefiles

University of Wisconsin - Madison, DEPT. OF NUCLEAR ENGINEERING Feb 10, 2010
NE 506, Practicum in Monte Carlo Radiation Transport
 UNIX Shell, Basic Scripting, Environment Variables, Permissions, Regular Expressions, Makefiles

INVITED
SCIENTIFIC
COMPUTING
TEACHING

SciPy Conference , Austin, TX Introductory Python For Scientific Software	Jul 6–7, 2015
University of Split , Split, Croatia G-Node Advanced Scientific Programming in Python Summer School	Sep 8–13, 2014
SciPy Conference , Austin, TX Version Control and Unit Testing For Scientific Software	Jun 25, 2013
University of Chicago, Graduate School , Chicago, IL Computational Literacy Workshop	Jan 12–13, 2013
University of California, Berkeley , Berkeley, CA Department of Statistics Scientific Computing Workshop	Oct 20–21, 2012
Lawrence Berkeley National Laboratory , Berkeley, CA Software Carpentry Python Workshop	Oct 17–18, 2012
International Center for Theoretical Physics , Trieste, Italy UNESCO/IAEA Advanced School on Scientific Software Development	Feb 20–Mar 2, 2012
University of Toronto , Toronto, ON, Canada SciNet Consortium For High Performance Computing Software Carpentry Bootcamp	Nov 7–8, 2011
American Nuclear Society Winter Meeting , Washington, D.C. Young Professionals Congress Hacker Within Scientific Computing Tutorial	Nov 1, 2011
Michigan State University , East Lansing, MI Institute for Cyber Enabled Research (iCER) and BEACON Center THW Bootcamp	Jun 4–5, 2011

SCIENTIFIC
COMPUTING
TEACHING

Berkeley Institute for Data Science , Berkeley, CA Managing Databases in SQL	Jan 14–15, 2015
Berkeley Institute for Data Science , Berkeley, CA Testing for Scientific Software	Jun 4–5, 2015
Lawrence Berkeley National Laboratory , Berkeley, CA Women in Science and Engineering Bootcamp	Apr 14–15, 2014
The University of Chicago , Chicago, IL Software Carpentry Scientific Computing Workshop	Apr 2–3, 2012
The University of Wisconsin , Madison, WI The Hacker Within Software Carpentry Bootcamp	Jan 12–14, 2011
The University of Wisconsin , Madison, WI The Hacker Within Python Bootcamp	Jan 12–14, 2010
The University of Wisconsin , Madison, WI The Hacker Within C++ Bootcamp	Mar 24–31, 2009
The University of Wisconsin , Madison, WI University of Wisconsin, Hacker Within UNIX Bootcamp	Jan 12–15, 2009

POSTDOCTORAL
RESEARCHERS

<u>NAME</u>	<u>DATES</u>	<u>ROLE</u>
Mehmet Turkmen	2019–2020	Advisor
Alexander Lindsay	2016–2017	Advisor

GRADUATE
RESEARCHERS

<u>NAME</u>	<u>DEGREE - YEAR</u>	<u>ROLE</u>
Michael Cheng	MS - 2017	MS Second Reader
Mark Kamuda	MS - 2017	MS Second Reader
Mark Kamuda	PhD - 2019	PhD Advisor
Gregory Westphal	MS - 2019	MS Advisor
Erik Medhurst	MS - 2020	MS Advisor
Andrei Rykhlevskii	PhD - 2020	PhD Advisor

Jin Whan Bae	MS - 2019	MS Advisor
Katherine C. Hepler	PhD - 2020	Dissertation Committee Chair
Alvin Lee	MS - 2020	MS Second Reader
Sun Myung Park	PhD - (est. 2022)	PhD Advisor
Anshuman Chaube	PhD - (est. 2022)	PhD Advisor
Gwendolyn Chee	PhD - (est. 2022)	PhD Advisor
Roberto Fairhurst-Agosta	PhD - (est. 2023)	PhD Advisor
Zoë Richter	PhD - (est. 2023)	PhD Advisor
Samuel Dotson	PhD - (est. 2024)	PhD Advisor
Amanda Bachmann	PhD - (est. 2024)	PhD Advisor
Luke Seifert	PhD - (est. 2025)	PhD Advisor
Lu Kissinger	PhD - (est. 2025)	PhD Advisor
Oleksandr Yardas	PhD - (est. 2025)	PhD Advisor

UNDERGRADUATE RESEARCHERS	<u>NAME</u>	<u>DEGREE - YEAR</u>	<u>SCHOLARSHIPS</u>
	Jin Whan Bae	BS - 2017	NPRE Outstanding Undergrad Research ANS Best Student Fuel Cycle Presentation
	Kathryn Mummah	BS - 2017	Roy G. Post Foundation Scholarship ANS FCWMD Randall Scholar
	Eric Riewski	BS - 2017	
	GyuTae Park	BS - (est. 2018)	
	Yukun Tan	BS - (est. 2018)	Students Pushing Innovation
	Lu Kissinger	BS - 2019	
	Xin Wen	BS - 2018	Students Pushing Innovation
	Daniel Chu	BS - 2020	
	Tyler Kennelly	BS - 2019	
	Bradley Ellis	BS - 2019	
	Adam Pichman	BS - 2019	
	Zoë Richter	BS - 2018	
	Gavin Davis	BS - (est. 2021)	
	Kip Kleimenhagen	BS - (est. 2021)	
	David Atwater	BS - (est. 2021)	
	Nathan Ryan	BS - (est. 2022)	
	Anna Balla	BS - (est. 2021)	
	Nataly Panczyk	BS - (est. 2024)	

VISITING RESEARCHERS	<u>NAME</u>	<u>DATES</u>	<u>LEVEL - INSTITUTION</u>
	Gavin Ridey	2017	BS–University of Tennessee, Knoxville
	Aditya Bhosale	2017	BS - IIT, Bombay
	Snehal Chandan	2017	BS - IIT, Bombay
	Eleonora Skrzypek	2019	PhD - Warsaw University of Technology, Poland

SCIENTIFIC COMPUTING SKILLS		
Languages		bash/csh, C++, FORTRAN, Perl, Python, XML
Build Systems		make, CMake, automake
Databases		HDF5, SQL
Test Frameworks		CTest, GoogleTest, nose
Version Control		cvs, git, hg, svn
Other Tools	Doxygen, Sphinx, GoldSim, L ^A T _E X, Mathematica, MatLab, MCNP, MOOSE	

EDITING AND REVIEWING	Editorial Board	
		<i>Journal of Open Source Software</i> 2016 – present
		<i>Journal of Open Source Education</i> 2018 – present
		<i>Nuclear Technology</i> 2018 – present
		<i>Nuclear Engineering and Design</i> 2020 – present

Manuscript Referee

Annals of Nuclear Energy
Journal of Nuclear Energy Science and Power Generation Technology
Nuclear Engineering and Design
Nuclear Science and Engineering
Nuclear Technology
Progress in Nuclear Energy

Grant Proposal Referee

Dept. of Energy Nuclear Energy University Programs
Dept. of Energy Technology Commercialization Fund
Blue Waters Fellows Program
Alfred P. Sloan Foundation

Book Proposal Referee

O'Reilly Media
Elsevier

PROFESSIONAL
SERVICE

Advisory Committee, Digital Information Technology, Sloan Foundation 2019-2021
Chair, Nonproliferation and Policy Division, ANS 2020-2021
Executive Committee, Mathematics and Computation Division, ANS 2020-2021
Vice Chair, Nonproliferation and Policy Division, ANS 2019-2020
Chair & Host, Technical Workshop on Fuel Cycle Simulation 2019
Past Chair (*ex officio*), 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
Secretary-Treasurer, Fuel Cycle & Waste Management Division, ANS 2013-2015
Secretary, Young Members Group, ANS 2013-2014
Technical Program Co-Chair, SciPy, Scientific Python Conference 2013-2014
Member, Next Generation Leadership Committee, Waste Management Symposium 2013-2014
Moderator, Organizer, Panelist, inSCIght Scientific Computing Podcast 2011-2013
Co-Founder, Nuclear Pride, LGBTQA Organization 2011-2013
Co-Founder, Treasurer, President, Hacker Within Scientific Computing Group 2008-2011
Governor, Treasurer, University of Wisconsin ANS student section 2008-2010

DEPARTMENTAL
SERVICE

Faculty Advisor, UIUC ANS Student Section 2016-present
Undergraduate Committee 2019-present
Graduate Committee, Qualifying Exam Sub-Committee 2017-2019
 Admissions Sub-Committee Spring 2017
 Admissions Sub-Committee Fall 2016
Advisory Committee, 2017-2018
Faculty Search Committee, 2017-2018
Faculty Advisor, UIUC WiN Student Section 2017-2018

COLLEGE
SERVICE

Member, Instructional Facility Working Group, 2017-2018
Selection Committee, Clare Boothe Luce (CBL) Research Scholars, 2020-2021
Member, Engineering IT Governance Education Working Group, 2020-2021
Faculty Mentor, ARISE program 2019-2020
Member, ENG/TE Liaison Committee 2020-present
Member, Instructional Facility Working Group 2017-2018

Faculty Advisor, UIUC CSE The Hacker Within Scientific Computing Group **2016–2017**

CAMPUS **Steering Committee Member, Illinois Data Science Initiative** **2018**
SERVICE **Hack Mentor, Hack Illinois** **2017**

CONSULTING **Thomas Edison State University** Trenton, NJ **2018-2019**
Subject Matter Expert
Institute of Nuclear Power Operations (INPO) Academic Program Review