RACHEL N. SLAYBAUGH

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EDUCATION

Ph.D.	**University of Wisconsin–Madison**, Nuclear Engineering and Engineering Physics with a certificate in Energy Analysis and Policy	2011
M.S.	**University of Wisconsin–Madison**, Nuclear Engineering and Engineering Physics	2008
B.S.	**Pennsylvania State University**, Nuclear Engineering	2006

RESEARCH EXPERIENCE

Lawrence Berkeley National Laboratory Jan. 2021 – present
Division Director *Berkeley, CA*

- Managing the Cyclotron Road division to translate hard science into positive societal impact
- Expanding the division's mission to support even more deployment of innovative technologies

University of California, Berkeley Jan. 2014 - present
Associate Professor of Nuclear Engineering *Berkeley, CA*

- Developing numerical methods for neutral particle transport with an emphasis on supercomputing and advanced architectures; specialization in deterministic, Monte Carlo, and hybrid methods
- Applications in reactor design, shielding, and nuclear security and nonproliferation

Advanced Research Projects Agency – Energy Oct. 2017 – Nov. 2020
Program Director *Washington, DC*

- Director for MEITNER, the Nuclear OPEN+ cohort, LISE, and GEMINA Programs, supporting research for enabling technologies for advanced nuclear fission reactors
- Director for TERRA and ROOTS Programs, supporting research for sensing and data analytics for above- and below-ground plant outcomes
- Director for FOCUS Program, supporting research for solar technologies that combine photovoltaic and concentrated solar power technologies

Bettis Laboratory Mar. 2012 - Aug. 2014
Senior Engineer in the Shield Design and Development group *West Mifflin, PA*

- Implemented the Forward-Weighted Consistent Adjoint Driven Importance Sampling (FW-CADIS) method for variance reduction in Monte Carlo; accredited method for use in shield design
- Developed new resonance factor variance reduction method for shielding

University of Wisconsin–Madison Sept. 2006 - Nov. 2011
Research Assistant / Rickover Fellow *Madison, WI*

- Dissertation: "Acceleration Methods for Massively Parallel Deterministic Transport"
- Developed two Monte Carlo source sampling methods for arbitrarily shaped plasma sources

Penn State Breazeale Reactor Aug. 2003 - Apr. 2006
Reactor Operator *University Park, PA*

- NRC licensed Reactor Operator for TRIGA Mark III reactor
- Analyzed core burn-up anomaly; calibrated gamma irradiation facilities

SELECTED PUBLICATIONS

Suzanne Baker, Jessica Lovering, **Rachel Slaybaugh**, and Denia Djokic. "A Policy Pathway for Nuclear Justice." Policy Report for Good Energy Collective. April 27, 2021.

R. Martineau, D. Andrs, R. Carlsen, D. Gaston, J. Hansel, F. Kong, A. Lindsay, C. Permann, A. Slaughter, E. Merzari, R. Hu, *A. Novak*, **R. Slaybaugh**. "Multiphysics for Nuclear Energy Applications Using a Cohesive Computational Framework." *Nuclear Engineering and Design.* **367** (2020) 1107512.

Rachel Slaybaugh, Joel Fetter, Curt Nehrkorn, Geoffrey Short. "Generating Electricity Managed by Intelligent Nuclear Assets (GEMINA)." Funding Opportunity No. DE-FOA-002174. (Oct 2019)

Madicken Munk, **Rachel Slaybaugh**, "Review of Hybrid Methods for Deep-Penetration Neutron Transport." *Nuclear Science and Engineering.* **193**:10 (2019) 1055-1089.

James E. Bevins, **R.N. Slaybaugh**. "Gnowee: A Metaheuristic Optimization Algorithm for Solving Engineering Problems Containing Continuous and Discrete Design Parameters." *Nuclear Technology.* **205**:4 (2019) 542-562.

R.N. Slaybaugh, *M. Ramirez-Zweiger*, Tara Pandya, Steven Hamilton, T.M. Evans. "Eigenvalue Solvers for Modeling Nuclear Reactors on Leadership Class Machines," *Nuclear Science and Engineering.* **190** (2017) 31-44.

Jeffery B. Greenblatt, Nicholas R. Brown, **Rachel Slaybaugh**, Theresa Wilks, Emma Stewart, and Sean T. McCoy. "The Future of Low-Carbon Electricity," *Annual Review of Environment and Resources.* **42** (2017) 289-316.

PROFESSIONAL SERVICE

Boards and Leadership

National Academies of Science member of the Committee on Laying the Foundations for New and Advanced Nuclear Reactors in the United States	2020-2022
Biden-Harris Transition Team	2020
Good Energy Collective, Founding Board Chair	2020-present
Pennsylvania State University, Nuclear Alumni Advisory Council	2020-2021
Nuclear Science and Engineering Editorial Advisory Board	2020-present
University of Michigan, NERS Department Advisory Board	2019-2021
Nuclear Energy Advisory Committee (a U.S. FACA), Appointed Member	2016-2017
Senior Fellow of the Breakthrough Institute	2017-present
American Nuclear Society, Board of Directors	2007-2009

Software and Computing

Berkeley Institute for Data Science	Senior Fellow; Advisory Board Member
Berkeley Research Computing	User Advisory Group
The Hacker Within	UCB Faculty Advisor 2014-2017; UW co-founder 2009
Software & Data Carpentry	Instructor since 2013

American Nuclear Society

Math and Comp. Division	Chair rotation 2016-2019, Exec. Comm. 2013-2016
Rad. Protection and Shielding Div.	Exec. Comm. 2015-2018
Young Members Group	Exec. Comm. 2014-2017
other Past Chair / Vice Chair	NEED Comm, Professional Divisions Comm, Student Sections Comm, Professional Women in ANS

Reviewer for Canadian Innovation Fund and US DOE Technology Commercialization Fund