

# RACHEL N. SLAYBAUGH

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## SUMMARY

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I'm driven by connection to mission. I love to work at the intersection of innovative technology and creating a path to impact in the world. I enjoy working in teams and am a good manager. I understand policy and government. I'm committed to diversity, equity, and inclusion.

## EXPERIENCE & ACCOMPLISHMENTS

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**Lawrence Berkeley National Laboratory**  
*Division Director*

Jan. 2021 – present  
*Berkeley, CA*

- Source and select ~10 hard tech innovators per year for a 2-year fellowship program to turn their technology concept into a product with a positive societal impact (~\$6M/year)
- Fellows embed at LBNL where we support their technical development and collaborations
- Responsible for outcomes, safety, and reporting to Department of Energy and LBNL
- Coordinate closely with Activate.org leadership in co-running the program

**University of California, Berkeley**  
*Associate Professor of Nuclear Engineering*

Jan. 2014 – present  
*Berkeley, CA*

- Developing numerical methods for neutral particle transport with an emphasis on supercomputing and advanced architectures; applications in reactor design, shielding, and nonproliferation
- Mentored PhDs in optimization, thermal fluids, and cryptography and anomaly detection projects
- Founded the Nuclear Innovation Bootcamp, which brings diverse students from around the world to learn skills essential to innovation in nuclear energy
- Frequent invited speaker on innovation in the nuclear energy sector at clean tech, academic, government, NGO, and international fora
- Published 25 journal publications, 44 refereed conference proceedings, 3 technical reports, 2 book chapters, 5 open source pieces of software, and 2 policy pieces
- Graduated 8 PhD and 6 MS students; research adviser for 1 assistant project scientist, 1 postdoctoral scholar, 1 visiting scholar, and 14 undergraduate students
- Won >\$2.5M as principal investigator (PI) and >\$26M as co-PI for numerical methods research
- Created and support a course in which Berkeley students do hands on science experiments at under-served elementary schools in Oakland

**Advanced Research Projects Agency – Energy**  
*Program Director*

Jan. 2017 – Oct. 2020  
*Washington, DC*

- Created programs and selected teams developing technologies for advanced nuclear fission reactors, \$95M across 28 teams: MEITNER, the Nuclear OPEN+ cohort, LISE, and GEMINA
- Provided deep technical and business guidance while managing: the nuclear teams; the TERRA and ROOTS Programs, supporting research for sensing and data analytics for above- and below-ground plant outcomes (~\$90M across 18 teams); and the FOCUS Program, supporting research for solar technologies that combine photovoltaic and concentrated solar power technologies (~\$12M across 4 teams)

**Bettis Laboratory**  
*Senior Engineer in the Shield Design and Development group*

Mar. 2012 – Aug. 2014  
*West Mifflin, PA*

- Implemented the Forward-Weighted Consistent Adjoint Driven Importance Sampling (FW-CADIS) method and developed new resonance factor for variance reduction in Monte Carlo
- Qualified these methods and software for use in shield design to dramatically reduce time and improve accuracy in design calculations

## University of Wisconsin–Madison

*Research Assistant / Rickover Fellow*

Sept. 2006 – Nov. 2011

*Madison, WI*

- Dissertation: “Acceleration Methods for Massively Parallel Deterministic Transport” where I added 3 new methods to Denovo, software from Oak Ridge National Laboratory, that are still used
- Developed two Monte Carlo source sampling methods for arbitrarily shaped plasma sources

## Penn State Breazeale Reactor

*Reactor Operator*

Aug. 2003 – Apr. 2006

*University Park, PA*

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

## EDUCATION

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

## LEADERSHIP & SERVICE

### *Boards and Leadership*

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National Academies of Science member of the Committee on Laying the Foundations for New and Advanced Nuclear Reactors in the United States	2020-2022
Berkeley Innovation & Entrepreneurship Council	2021-present
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
Berkeley Energy and Resources Collaborative (BERC), Advisory Board Member	2017-2021
Nuclear Energy Advisory Committee (a U.S. FACA), Appointed Member	2016-2017
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
other Past Chair / Vice Chair	NEED Comm, Professional Divisions Comm, Student Sections Comm, Professional Women in ANS

*Reviewer* for Canadian Innovation Fund, US DOE Technology Commercialization Fund, and a number of journals and technical conferences