

ROBERT ANGELO BORRELLI
ASSOCIATE PROFESSOR
UNIVERSITY OF IDAHO • IDAHO FALLS CENTER FOR HIGHER EDUCATION
NUCLEAR ENGINEERING AND INDUSTRIAL MANAGEMENT
995 MK SIMPSON BOULEVARD • IDAHO FALLS ID 83401
RBORRELLI@UIDAHO.EDU • @THEDOCTORRAB • 208.533.8122

EDUCATION AND TRAINING

University of California-Berkeley • Doctor of Philosophy • Nuclear Engineering	2006
Worcester Polytechnic Institute • Master of Science • Civil/Environmental Engineering	1999
Worcester Polytechnic Institute • Bachelor of Science • Mechanical/Nuclear Engineering	1996

RESEARCH AND PROFESSIONAL EXPERIENCE

University of Idaho • Idaho Falls Center for Higher Education Nuclear Engineering and Industrial Management Department

Associate Professor	May 2021 -
Assistant Professor	July 2015 - May 2021
Coordinator - NPP Decommissioning and Used Fuel Management Certificate	August 2019 -
Affiliate - Boise State University Energy Policy Institute	August 2019 -
State of Idaho Professional Engineer, Faculty Restricted	October 2019 -

University of California-Berkeley • Department of Nuclear Engineering • Postdoctorate Researcher 2009-12

The University of Tokyo • Department of Nuclear Engineering/Management • Research Associate 2007-09

SELECTED AWARDED PROJECTS

- (1) Michael Haney (PI), R. A. Borrelli (co-PI), Dakota Roberson (co-PI), Constantinos Kolias (co-PI) - University of Idaho, Ben Lampe (co-PI), Sean McBride (co-PI) - Idaho State University. Secure Cyberspace and Resilient Industrial Systems Workforce Development. Idaho Global Entrepreneurial Mission (IGEM) – Higher Education Research Council **\$700,000**. 2024.07.01 - 2025.06.30. [*Borrelli PI 2024.07.01*]
- (2) Kathleen Araújo (PI), Cassie Koerner (co-PI) - Boise State University, R. A. Borrelli (co-PI) - University of Idaho, with multiple universities. Common ground: Legitimacy in consent-based siting for interim nuclear waste storage. Department of Energy Consent-Based Siting for Interim Storage Program - Community Engagement Opportunities. **\$2,000,000**. 2023.09.29 - 2025.09.28.
- (3) Michael Haney (PI), R. A. Borrelli (co-PI), Dakota Roberson (co-PI), Constantinos Kolias (co-PI) - University of Idaho, Ben Lampe (co-PI), Sean McBride (co-PI) - Idaho State University. Secure Cyberspace and Resilient Industrial Systems Workforce Development. Idaho Global Entrepreneurial Mission (IGEM) – Higher Education Research Council **\$700,000**. 2023.07.01 - 2024.06.30.
- (4) Michael Haney (PI), R. A. Borrelli (co-PI), Dakota Roberson (co-PI), Constantinos Kolias (co-PI) - University of Idaho, Ben Lampe (co-PI), Sean McBride (co-PI) - Idaho State University. Secure Cyberspace and Resilient Industrial Systems Workforce Development. Idaho Global Entrepreneurial Mission (IGEM) - Higher Education Research Council **\$693,000**. 2022.07.01 - 2023.06.30.
- (5) R. A. Borrelli (PI), Michael Haney (co-PI) - University of Idaho. Cyber-informed design, education, and training for cyberthreat resiliency with real-time nuclear reactor simulation. University of Idaho. Operation: Resubmission Support. **\$34,122**. 2022.04.30 - 2022.09.30.
- (6) Thomas A. Ulrich (PI) - Idaho National Laboratory, R. A. Borrelli (co-PI) - University of Idaho. User evaluation of the NuScale simulator at the Center for Advanced Energy Studies. CAES programmatic funding. **\$50,000**. 2022.03.01 - 2022.09.30.

- (7) R. A. Borrelli (PI), Jason Barnes (Senior Adviser) - University of Idaho. Experimental determination of interactions between the radiation fields of Dragonfly's MMRTG and Titan's environment. Idaho NASA EPSCoR Research Initiation Grant. 2021.05.01 - 2022.04.30 **\$82,962**.
- (8) Richard N. Christensen (PI), R. A. Borrelli, Michael G. McKellar, Michael Haney, David Arcilesi (co-PIs) - University of Idaho, Richard Jacobson (co-PI) Idaho State University. NuScale Simulator at the Center for Advanced Energy Studies. Department of Energy Scientific Infrastructure Support for Consolidated Innovative Nuclear Research. **\$321,525**. 2019.10.01 - 2022.09.30
- (9) R. A. Borrelli (PI), Richard N. Christensen (co-PI) - University of Idaho, Brian J. Jaques (co-PI) - Boise State University, Piyush Sabharwall (co-PI) - Idaho National Laboratory, Mark Delligatti (co-PI) - Table Rock, LLC, Sakae Casting USA, LLC (co-PI). Modeling and design of borated aluminium cask for used fuel cooling. Idaho Global Entrepreneurial Mission (IGEM) - Idaho Commerce, **\$237,898**. 2018.01.01-2019.05.31
- (10) R. A. Borrelli (PI), Lee Ostrom (Senior Advisor) - University of Idaho, Stephen G. Johnson (Senior Advisor) - Idaho National Laboratory. Performance assessment of americium as fuel in radioisotope thermoelectric generators for deep space exploration. Idaho NASA EPSCoR Research Initiation Grant. **\$55,000**. 2017.08.01-2018.04.30

RELEVANT PUBLICATIONS

- (1) R. A. Borrelli, Kathleen Araújo, Cassie Koerner, Denia Djokić (2024). Consent based siting for Spent Nuclear Fuel – The Common Ground Consortium Focus on Research and Public Conversations. Las Vegas, Nevada: Proc., American Nuclear Society Annual Meeting.
- (2) Nathan Manwaring, Matt Johnson, R. A. Borrelli (2024). At-power Subcritical Multiplication in the Advanced Test Reactor during Nuclear Requalification Testing. Nuclear Engineering and Design 426, 113399.
- (3) Sam J. Root, Porter Throckmorton, Jonathan Tacke, Jacob Benjamin, Michael Haney, R. A. Borrelli (2023). Cyber Hardening of Nuclear Power Plants with Real-time Nuclear Reactor Operation – 1. Preliminary Operational Testing. Progress in Nuclear Energy 162, 104742.
- (4) Emma K. Redfoot, Kelley M. Verner, R. A. Borrelli (2022g). Applying analytic hierarchy process to industrial process design in a nuclear renewable hybrid energy system. Progress in Nuclear Energy 145, 104083.
- (5) Pedro Mena, R. A. Borrelli, Leslie Kerby (2022). Survey of markets for nuclear power in Western North America. International Journal of Energy, Environment, and Economics 29, 17.
- (6) Pedro Mena, R. A. Borrelli, Leslie Kerby (2022). Expanded Analysis of Machine Learning Models for Nuclear Transient Identification Using TPOT. Nuclear Engineering and Design 390, 111694.
- (7) Emma K. Redfoot, Michael G. McKellar, R. A. Borrelli (2022). Allocating heat and electricity in an integrated energy system coupled with a water purification system. Nuclear Engineering and Design 397, 111902.
- (8) Olin Calvin, Barry D. Ganapol, R. A. Borrelli (2022). Introduction of the adding and doubling method for solving Bateman equations for nuclear fuel depletion. Nuclear Science and Engineering, 10.1080/00295639.2022.2129950.
- (9) John P. Carter, R. A. Borrelli (2020). Neutron physics study of an integral molten salt reactor using Monte Carlo N-Particle code. Nuclear Engineering and Design 365, 10.1016/j.nucengdes.2020.110718.
- (10) Jieun Lee, Amey Shigrekar, R. A. Borrelli (2019). Hazard and operability analysis of a pyroprocessing facility. Nuclear Engineering and Design 348, 131.

RELEVANT COURSES TAUGHT

University of Idaho - Idaho Falls Center for Higher Education

NE527: Nuclear material storage, transport, disposal

NE535: Nuclear Criticality Safety I & II

NE585: Nuclear Fuel Cycle Analysis

TM529: Risk Assessment

University of California-Berkeley • Department of Nuclear Engineering

E124: Ethics and the Impact of Technology on Society

The University of Tokyo • Department of Nuclear Engineering/Management

Technical English for Scientists

Diablo Valley Community College (CA) • Department of Architecture and Engineering

ENG110: Introduction to Engineering

SYNERGISTIC ACTIVITIES

- (1) American Nuclear Society University of Idaho Student Section – Faculty Advisor
- (2) American Nuclear Society National Program, Screening, Student Sections Committees – Member
- (3) Idaho Section of the American Nuclear Society – Treasurer, Community Service