

**ROBERT ANGELO BORRELLI**  
**ASSOCIATE PROFESSOR**  
**UNIVERSITY OF IDAHO · IDAHO FALLS CENTER FOR HIGHER EDUCATION**  
**NUCLEAR ENGINEERING AND INDUSTRIAL MANAGEMENT**  
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**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) 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**. 2023.08.01 - 2025.07.31.
- (2) Michael Haney (PI), R. A. Borrelli (co-PI), Dakota Roberson (co-PI), Constantinos Koliass (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.
- (3) 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.
- (4) 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.
- (5) 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**.
- (6) 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
- (7) 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

### RELEVANT PUBLICATIONS

- (1) Root, Sam J., Throckmorton, Porter, Tacke, Jonathan, Benjamin, Jacob, Haney, Michael, Borrelli, R. A., 2023. Cyber Hardening of Nuclear Power Plants with Real-time Nuclear Reactor Operation – 1. Preliminary Operational Testing. *Progress in Nuclear Energy* 162, 104742.
- (2) Redfoot, Emma K., Verner, Kelley M., Borrelli, R. A., 2022. Applying analytic hierarchy process to industrial process design in a nuclear renewable hybrid energy system. *Progress in Nuclear Energy* 145, 104083.
- (3) Mena, Pedro, Borrelli, R. A., Kerby, Leslie, 2022. Survey of markets for nuclear power in Western North America. *International Journal of Energy, Environment, and Economics* 29, 17.
- (4) Mena, Pedro, Borrelli, R. A., Kerby, Leslie, 2022. Expanded Analysis of Machine Learning Models for Nuclear Transient Identification Using TPOT. *Nuclear Engineering and Design* 390, 111694.
- (5) Redfoot, Emma K., McKellar, Michael G., Borrelli, R. A., 2022. Allocating heat and electricity in an integrated energy system coupled with a water purification system. *Nuclear Engineering and Design* 397, 111902.
- (6) Calvin, Olin, Ganapol, Barry D., Borrelli, R. A., 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.
- (7) Manwaring, Nathan, Borrelli, R. A., 2022. At-power subcritical multiplication in the Advanced Test Reactor. *Nuclear Engineering and Design* 401, 112040.
- (8) Dustin, J. Seth, Borrelli, R. A., 2021. Modeling of Am-241 as an alternative fuel source in a radioisotope thermoelectric generator. *Nuclear Engineering and Design* 385, 111495.
- (9) Carter, John P., Borrelli, R. A., 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) Lee, Jieun, Shigrekar, Amey, Borrelli, R. A., 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***

ENGIN110: Introduction to Engineering

### SYNERGISTIC ACTIVITIES

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