

Emory Colvin

www.linkedin.com/in/emorycolvin
colvinem@oregonstate.edu | 678.653.0636

EDUCATION

OREGON STATE UNIV.

PHD CANDIDATE IN NUCLEAR
ENGINEERING

Graduate Certificate in College &
University Teaching

GEORGIA TECH

MS IN NUCLEAR ENGINEERING
May 2009 | Atlanta, GA

GEORGIA TECH

BS IN NUCLEAR & RADIOLOGICAL
ENGINEERING

May 2007 | Atlanta, GA

High Honor

Minor: Aerospace Engineering,
Propulsion Focus

Certificate: French

SELECTED

COURSEWORK

OREGON STATE

Computer Programming for Mechanical
Systems

Large Scale Scientific Computing with
Data

Advanced Nuclear Reactor Physics

Theories of Teaching & Learning

The Inclusive Classroom

Current Issues in Higher Ed.

Course Design & Methods

GEORGIA TECH

Rocket Propulsion

Transport Fundamentals

Radiological Assessment & Waste

Management

Plasma Physics

Adv. Nuclear Engineering Design

Nuclear Fuel Cycle

SKILLS

COMPUTING

Python • Basic FORTRAN • Matlab •
L^AT_EX • MCNP • SCALE (ORIGEN,
COUPLE)

OTHER

Licensed Reactor Operator • Certified
Lean/Six Sigma Green Belt

EXPERIENCE

OREGON STATE UNIVERSITY | GRADUATE TEACHING ASSISTANT

2016 - Present | Corvallis, OR

- 2019 Oregon State University College of Engineering Graduate Teaching Assistant Award.
- Instructor of record, Nuclear & Radiation Physics I, Fall 2018.
- Primary Instructor, Nuclear Reactor Laboratory, Spring 2018 and 2019.

SANFORD-BROWN COLLEGE | ADJUNCT INSTRUCTOR

2013 - 2015 | Atlanta, GA

- Taught math, general physics, and ultrasound physics for the Cardiovascular Sonography and Diagnostic Medical Sonography programs.
- Passed the ARDMS Sonography Principles and Instrumentation registry exam.
- Created new course materials and registry exam study materials.

HUNTINGTON LEARNING CENTER | TUTOR

2013 - 2015 | Marietta, GA

- Tutored math and physics for middle through high school students.
- Taught GED, SAT, and ACT exam preparation.

NORFOLK NAVAL SHIPYARD | ENGINEER

2009 - 2012 | Portsmouth, VA

- Nuclear Engineer, Shift Test Engineering: authorized work and conducted system tests.
- Nuclear Engineer, Test Engineering: writing work instructions for creation, installation, and removal of test equipment.
- General Engineer, Process Improvement: facilitating meetings and process improvement events.

GEORGIA INSTITUTE OF TECHNOLOGY (GEORGIA TECH) |

HEALTH PHYSICS TECHNICIAN

2007 - 2008 | Atlanta, GA

- Surveys of open source labs, sealed source leak testing.
- Radioactive material receipt.
- Dosimetry services, calibration of radiation detection instruments.
- Radioactive waste collection and disposal.

RESEARCH

CENTER FOR SPACE NUCLEAR RESEARCH (CSNR) | SUMMER FELLOW

2006 | Idaho Falls, ID

Evaluated potential performance of a nuclear thermal rocket for cargo transfer between Low Earth Orbit and Low Lunar Orbit in support of a lunar outpost. Included analysis of construction options, including an International Space Station facility and a free-floating structure.

2018, 2019 | Idaho Falls, ID

Evaluated ²³⁷Np target irradiation in Idaho National Laboratory's Advanced Test Reactor for ²³⁸Pu production in support of space missions using Radioisotope Thermoelectric Generators (RTGs).

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RESEARCH, CONTINUED

MARS SOCIETY AT GEORGIA TECH | CHARTER MEMBER

2005 - 2006 | Secretary

2006 - 2009 | President

2005 - 2009 | Mars Desert Research Station

Simulated Mars base in the Utah desert near Hanksville. Crews of 6 spent 2-week rotations on-site. Georgia Tech sent the first all-student crew from a single school. Ongoing research into station operations and the use of amateur radio to provide better communications coverage and an automatic position reporting system.

- 2005 - Crew 37 Mission Support Lead.
- 2006 - Crew 47 Executive Officer. Installed power meter to monitor power usage at various locations in the habitat. Later used in conjunction with NASA-Ames "Mobile Agents" research.
- 2007 - Crew 60 Commander.
- 2008 - Crew 69 Commander.
- 2009 - Crew 79 Commander.

SERVICE

2005 - present | American Nuclear Society

2019 - present | Member, Diversity & Inclusion Committee

2016 - present | Coalition of Graduate Employees (AFT Local 606g)

2016 - 2017 | Nuclear Science & Engineering Steward.

2017 - 2018 | Secretary/Treasurer (Executive Council).

2018 - 2019 | VP of Grievances (Executive Council).

Ongoing | Health Insurance Advisory Council.

2013 - present | Society for Creative Anachronism (SCA)

2014 - 2015 | Treasurer, Local Chapter (Marietta, GA).

2016 - 2018 | Art director, Local Chapter (Salem, OR).

2019 | Event Coordinator (over 200 people).

2019 - present | Regional treasurer (central & south Oregon)

Ongoing | Calligraphy for awards.

2013 | SpaceUp Atlanta Conference

Planning committee - programs and food/catering coordination.

PUBLICATIONS

- [1] J. D. Bess, E. Colvin, and P. Cummings. NTR-enhanced lunar-base supply using existing launch fleet capabilities. In *Proceedings of NETS*, June 2009.
- [2] E. Colvin and T. S. Palmer. A critique of literature on transgender inclusion in engineering education and practice. In *Transactions of the American Nuclear Society*, volume 121, pages 233–235, November 2019.
- [3] E. Colvin and T. S. Palmer. Use of MCNP surface source cards for isotope production optimization. In *Transactions of the American Nuclear Society*, volume 121, pages 1549–1551, November 2019.
- [4] E. Colvin, J. H. Rhodes, G. A. Marcantel, T. Kajihara, J. T. Gates, J. J. Kuczek, L. B. Beveridge, A. N. Nagarajan, and D. A. Fritz. Optimization of plutonium-238 production in the advanced test reactor for radioisotope thermoelectric generators in deep space exploration applications. In *Proceedings of ANS NETS 2019: Nuclear and Emerging Technologies for Space*, February 2019.
- [5] E. M. Colvin, T. S. Palmer, and S. R. Reese. Preliminary analysis of ^{238}Pu production in TRIGA thermal columns. In *Proceedings of ANS NETS 2018 - Nuclear and Emerging Technologies for Space*, February 2018.
- [6] E. F. Gayton, W. M. Stacey, W. Van Rooijen, T. L. Bates, E. M. Colvin, J. A. Dion, J. S. Feener, D. G. Gibbs, C. M. Grennor, J. W. Head, E. W. Hope, J. A. Ireland, A. A. Johnson, B. L. Jones, N. A. Mejias, C. M. Myers, A. E. Schmitz, C. M. Sommer, T. S. Sumner, and L. P. Tschaeppe. Design overview of a fast, subcritical advanced burner reactor. In *Proceedings of ANS/ENS International Meeting and Nuclear Technology Expo*, November 2007.
- [7] S. D. Howe, N. Barra, J. Bess, E. Colvin, P. Cummings, B. Cunningham, M. Ghrist, R. Johnson, R. O'Brien, J. Perkins, K. Supak, and M. Yano. Returning humans to the moon: Comparison of chemical engine and nuclear rocket performance as an earth departure stage. In *Proceedings of STAIF*, February 2007.
- [8] S. D. Howe, N. Barra, J. Bess, E. Colvin, P. Cummings, B. Cunningham, M. Ghrist, R. Johnson, R. O'Brien, J. Perkins, K. Supak, and M. Yano. Using a nuclear reactor to support a lunar outpost: Is it cost effective? In *Proceedings of ANS Annual Meeting: Space Nuclear Conference*, June 2007.
- [9] W. M. Stacey, W. Van Rooijen, T. Bates, E. Colvin, J. Dion, J. Feener, E. Gayton, D. Gibbs, C. Grennor, J. Head, F. Hope, J. Ireland, A. Johnson, B. Jones, N. Mejias, C. Myers, A. Schmitz, C. Sommer, T. Sumner, and L. Tschaeppe. A TRU-Zr metal-fuel sodium-cooled fast subcritical advanced burner reactor. *Nuclear Technology*, 162(1):53–79, April 2008.