Christopher M. Perfetti, PhD

1 University of New Mexico
Albuquerque, NM 87131
cperfetti@unm.edu
(505)-277-1945

Education:

University of Michigan, Ann Arbor, MI
2009 – 2012 **Doctor of Philosophy** in Nuclear Engineering and Rad. Sciences, May 2012
Dissertation Title: "Advanced Monte Carlo Methods for Eigenvalue Sensitivity Coefficient Calculations"

University of Florida, Gainesville, FL
2007 – 2008 **Master of Science** in Nuclear and Radiological Engineering, December 2008
Thesis Title: "Addressing the HTGR Double Heterogeneity and Methods for HTGR Design"
2004 – 2007 **Bachelor of Science** in Nuclear and Radiological Engineering, December 2007

Experience:

University of New Mexico, Nuclear Engineering Department

07/23 – Present **Associate Professor**
08/18 – 06/23 **Assistant Professor**

- Principal Investigator for externally funded research grants totaling $4,114,652.
- Has supervised 5 senior thesis students, 6 Master's thesis students, and 3 PhD students.
- Currently advises 2 undergraduate students, 1 Master's student and 9 PhD students.
- Established a formal recruitment pipeline partnership with Los Alamos National Laboratory's Nuclear Criticality Safety Division.
- Director of the International Nuclear Criticality Safety Short Course.
- Faculty Advisor for the UNM American Nuclear Society Student Section.
- Faculty Advisor for the UNM Alpha Nu Sigma Honor Society.
  - Revived UNM's Section of Alpha Nu Sigma in 2021.
- Guest Scientist in the Los Alamos National Laboratory's XCP-3 Group.

05/10 – 05/18 **Oak Ridge National Laboratory – Radiation Transport Group, R&D Staff**
10/14 – 08/17 **SCALE Team Lead for Sensitivity and Uncertainty Analysis Methods**
08/12 – 09/14 **Postdoctoral Research Associate**
09/11 – 08/12 **Postmasters Research Associate**
05/11 – 09/11 **NESLS Program Summer Intern**

- Led development of the continuous-energy TSUNAMI-3D code for sensitivity and uncertainty analysis, similarity assessment, and experimental data assimilation.
- Developed and instructed multi-day SCALE training courses for end users, regulators and developers in Monte Carlo and TSUNAMI sensitivity and uncertainty analysis tools for criticality safety, reactor physics, and radiation shielding analysis.

05/10 – 08/10 **Oak Ridge National Laboratory Summer Intern**
Developed a regression test suite for the TSUNAMI code within the SCALE code system.

Los Alamos National Laboratory

05/09 – 08/09 **Summer Student Intern** – Applied Physics (X-5) Division
Researched methods for modeling infinitely-reflected fuel lattices using a critical neutron spectrum in the MCNP5 Monte Carlo code.

Citizenship & Security Clearance:

- US Citizen
- Department of Energy Q-level Security Clearance

Awards & Honors:

- 2022 Best Board Award, Albuquerque Business First (Awarded to NMNS&T Board of Trustees)
- Samuel Glasstone Award (3rd place), 2021–2022 (Faculty Advisor for UNM ANS Student Section)
- Samuel Glasstone Award (3rd place), 2020–2021 (Faculty Advisor for UNM ANS Student Section)
- Samuel Glasstone Award (1st place), 2019–2020 (Faculty Advisor for UNM ANS Student Section)
- Samuel Glasstone Award (1st place), 2018–2019 (Faculty Advisor for UNM ANS Student Section)
- Best Local Section Management, 2017 (ANS Small Local Sections Award)
- Best Local Section Public Information, 2016 (ANS Small Local Sections Award)
- 1st place, ORNL NESLS 2011 Summer Student Poster Contest
- 2009 Nuclear Engineering University Program Fellowship Recipient
- Graduate Student of the Year (2008–2009), University of Florida ANS Student Section
- 2008 University of Florida – Nuclear Regulatory Commission Fellowship Recipient
- 2007 American Nuclear Society Student Design Competition Finalist

Professional Service:

University of New Mexico Service:

- School of Engineering
  - Member, Rankings and Reputation Committee — 2018 – Present
- Nuclear Engineering Department
  - Member, Admissions Committee — 2018 – Present
  - Member, Curriculum Committee — 2020 – Present
- Faculty Advisor, American Nuclear Society Student Section — 2018 – Present
- Faculty Advisor, Alpha Nu Sigma Honor Society — 2020 – Present

American Nuclear Society

- Member since 2006
- University of New Mexico Student Section
  - Faculty Advisor — 2018 – Present
- Reactor Physics Professional Division
  - Secretary/Treasurer/Vice-Chair/Chair/Past-Chair — 2020 – 2025
- Mathematics and Computation Professional Division
  - Benchmarks Committee Co-Chair — 2016 – Present
  - Executive Committee Member — 2018 – 2021
- Trinity (New Mexico) Local Section
  - Vice-Chair/Chair/Immediate Past-Chair/Past-Chair — 2020 – 2024
  - Membership Committee Chair — 2022 – Present
  - Executive Committee Member — 2019 – Present
- Oak Ridge / Knoxville Local Section
  - Vice-Chair/Chair/Past-Chair — 2014 – 2017
  - Bylaws and Rules Chair — 2016 – 2018
  - Section Development Chair — 2013 – 2016
  - Executive Committee Member — 2013 – 2017

Alpha Nu Sigma Honor Society

- Member since 2006
- University of Florida Student Section
  - Vice-President — 2007 – 2009
- Alpha Nu Sigma National Honor Society
  - National Vice-Chair — 2019 – 2021
  - National Chair — 2021 – Present
- University of New Mexico Student Section
  - Faculty Advisor — 2020 – Present

National Museum of Nuclear Science and History

- Member, Board of Trustees — 2019 – Present
- Chair, Adult Education Committee — 2019 – Present
- "Science on Tap" Seminar Series Lead Coordinator — 2019 – Present
  [See: http://scienceontapnm.blogspot.com/]
- Member, National STEM Educational Center Committee — 2021 – Present
- Member, International Nuclear Science Week Steering Committee — 2015 – Present
  [See: https://www.nuclearscienceweek.org/]

OECD Nuclear Energy Agency

- International Expert Group Membership:
  - Working Party on International Nuclear Data Evaluation Cooperation — 2012 – Present
  - Working Party on Nuclear Criticality Safety — 2013 – Present

Professional Conference Leadership

- General Chair — Mathematics & Computation (M&C) 2025
- General Chair — PHYSOR 2024
- Student Awards Chair — Mathematics & Computation (M&C) 2021
- General Chair — 2015 Nuclear Science Week "Big Event"
- Asst. Technical Program Chair — Mathematics & Computation (M&C) 2015
- Transportation Chair — PHYSOR 2012
- General Chair — 2009 American Nuclear Society Student Conference

Reviewer

- Annals of Nuclear Energy; Nuclear Technology; Journal of Computational Physics; and Nuclear Science and Engineering
- DOE Nuclear Engineering University Program – Technical Reviewer

Advisory Board Membership

- Univ. of New Mexico, Computational Science & Eng. Degree Program — 2021 – Present

Miscellaneous

- Student Experience Project Fellow — 2021 – 2022
- Dance Instructor, 505 Swing Dance Community — 2020
- Trumpet, UNM Health Sciences Orchestra — 2020
- Executive Board Member, Knoxville Swing Dance Association — 2017 – 2018
- Vice-Chair, Oak Ridge Postdoctoral Association — 2013 – 2014

Students:

Current PhD Students

	Name	*Status*	*Expected Graduation*	*University*	*Project/Thesis Title*
1.	Raymond Fasano	Part-time	2023	University of New Mexico	Advanced Methods for Quantitative Cyber Risk Assessment
2.	Benjamin Murphy	GRA	2024	University of New Mexico	Improving the Accuracy of Nuclear Data that Cannot be Measured Directly through Depletion Sensitivity Analysis
3.	Matthew Lazaric	GRA	2024	University of New Mexico	Using Integral Benchmark Experiments to Improve Differential Nuclear Data Evaluations
4.	Rowdy Davis	GRA	2024	University of New Mexico	Documenting the Unique Physics Properties of the UNM AGN-201M Reactor
5.	Melissa Moreno	GRA	2025	University of New Mexico	Validation and Testing of NRC Tools for Accident Tolerant Fuel behavior in Reactivity-initiated Accidents using Separate Effects Test Data
6.	Mekiel Olguin	GRA	2025	University of New Mexico	Sensitivity Methods for Uncertainty Analysis in Monte Carlo Photon/Electron Radiation Transport
7.	Alexis Maldonado	Part-time	2025	University of New Mexico	Sensitivity and Uncertainty Analysis for Time-Dependent Heat Transfer/Radiation Transport Multiphysics Simulations
8.	Ethan Krammer	NEUP Fellowship	2026	University of New Mexico	Depletion Sensitivity Analysis Method Development
9.	James Suthon	GRA	2028	University of New Mexico	Physics-based Nuclear Criticality Safety Validation of Heat-Source Plutonium

Current Master's Thesis Students

	Name	*Status*	*Expected Graduation*	*University*	*Project/Thesis Title*
1.	Riley Bulso	Part-time	2023	University of New Mexico	Developing a Predictive Capability for Plutonium Concentrations in Chloride Solutions

Current Undergraduate Students

	Name	*Project*	*University*	*Project/Thesis Title*
2.	Josephine Lewis	Global, National, and Human Security Project	University of New Mexico	Understanding the Causes of Nuclear Energy Policy Stagnancy in the United States
3.	Gibson Prall	Senior Honors Thesis	University of New Mexico	Quantifying the Rigor of Random Number Generators in Monte Carlo Radiation Transport Simulations

PhD Students Graduated:

	Name	*Status*	*Year Graduated*	*University*	*Dissertation Title*
1.	Daniel Timmons	GRA	2022	University of New Mexico	Use of a k-Eigenvalue Solver to Enhance Subcritical Benchmark Assessments
2.	Bobbi Riedel	GRA	2023	University of New Mexico	Understanding the Behavior of Upper Subcritical Limit Calculation Methods
3.	Colin Weaver	GRA	2023	University of New Mexico	Sensitivity and Uncertainty Analysis of Inertial Confinement Fusion Experiments

Master's Thesis Students Graduated:

	Name	*Status*	*Year Graduated*	*University*	*Thesis Title*
1.	Colin Weaver	GRA	2020	University of New Mexico	A Forward Analytic Model of Neutron Time of Flight Signals with Single Elastic Scattering and Beamline Attenuation for Inferring Ion Temperatures from MagLIF Experiments
2.	Kimberly Hinrichs	Part-time	2020	University of New Mexico	Characterization of Uranium Foil Irradiations at the WSU TRIGA Reactor using a New Reactor Model in SCALE
3.	Melissa Moreno	Part-time	2021	University of New Mexico	Monte Carlo Perturbation Analysis of Fuel Temperature Variations in the MCNP Model of the Annular Core Research Reactor
4.	Karissa Currie	Part-time	2021	University of New Mexico	Monte Carlo Perturbation Analysis of Dimension and Density Variations of the Annular Core Research Reactor Model Fuel
5.	Alexis Maldonado	Part-time	2022	University of New Mexico	Utilizing Sensitivity and Correlation Coefficients from MCNP and Whisper to Guide Microreactor Experiment Design
6.	Tara Robertson	GRA	2023	University of New Mexico	Developing a Predictive Capability for Plutonium Concentrations in Nitrate Solutions

Undergraduate Honors Senior Thesis Students Graduated:

	Name	*Year Graduated*	*University*	*Thesis Title*	*Post-Graduation Status*
1.	Matthew Lazaric	2020	University of New Mexico	Evaluation of the ENDF/B VIII.0 Nuclear Data Library	Pursuing a PhD at UNM
2.	Benjamin Murphy	2020	University of New Mexico	Understanding the Impact of Adjoint Weighting on Reactor Kinetics Parameters	Pursuing a PhD at UNM
3.	Rowdy Davis	2021	University of New Mexico	Expansion of the Monte Carlo Integrated Tiger Series Validation Suite	Pursuing a PhD at UNM
4.	Mekiel Olguin	2021	University of New Mexico	Evaluation of the AGN-201M Reactor's Dominance Ratio	Pursuing a PhD at UNM
5.	Ethan Krammer	2023	University of New Mexico	Using Machine Learning to Predict Nuclear Covariance Data	Pursuing a PhD at UNM

PhD Committee Membership – Service in non-Chair Roles:

	Name	*Year Graduated*	*University*	*Dissertation Title*
1.	Darren Talley	2019	University of New Mexico	Investigation of the Coupled Nuclear, Thermal-Hydraulic, and Thermo-Mechanical Response of a Natural Circulation Research Reactor under Severe Reactivity-Initiated Accident Transients
2.	Patrick O'Rourke	2020	University of New Mexico	Modeling and Simulation of Stochastic Neutron and Cumulative Deposited Fission Energy Distributions
3.	Vedant Mehta	2020	Georgia Institute of Technology	Investigating the Response of Yttrium Hydride Moderator Due to Changes in Stoichiometry and Temperature
4.	Corey Skinner	2022	University of New Mexico	Simulation of Thermal Radiation Transport in Stochastic Media with Nonlinear Temperature Dependence
5.	Jawad Moussa	2023	University of New Mexico	Methods for the Efficient Computation of Neutron Multiplicity Counting Distributions

Research Grants:

Total Research Awards since 2018: $4,114,652

Dates	*Project Title*	*Funding Agency*	*Role*	*Total Project Budget*	*Perfetti Share*
12/2018 – 09/2023	Advanced Monte Carlo Methods Development for Nuclear Critical & Subcritical Applications	LANL	PI	$649,338	$649,338
09/2019 – 08/2024	NNSA Consortium on Monitoring, Technology and Verification (MTV)	NNSA	Co-PI	$25,000,000	$503,510
10/2019 – 09/2023	Integrating Nuclear Criticality Experiments into Differential Nuclear Data Evaluations	DOE NEUP	PI	$400,000	$400,000
10/2019 – 09/2022	Sensitivity Methods for Monte Carlo Photon/Electron Radiation Transport	SNL	PI	$300,000	$300,000
10/2021 – 01/2024	Strengthening a Nuclear Criticality Safety Pipeline at the University of New Mexico	LANL	PI	$108,095	$138,095
10/2021 – 09/2024	Documenting the Unique Physics Properties of the UNM AGN-201M Reactor	DOE NEUP	PI	$400,000	$400,000
12/2021 – 08/2024	Outreach and Recruitment Pipeline for Underrepresented Students in New Mexico	NNSA	PI	$25,000,000 *(MTV Consortium Subcontract)*	$66,157
09/2022 – 09/2025	Validation and testing of NRC tools for Accident Tolerant Fuel behavior in reactivity-initiated accidents using separate effects test data	NRC	Co-PI	$500,000	$235,000
10/2022 – 09/2025	Photon/Electron Monte Carlo Transport Uncertainty Quantification and Sensitivity Analysis	SNL	PI	$352,556	$352,556
07/2023 – 06/2028	Physics-based Nuclear Criticality Safety Validation of Heat-Source Plutonium	LANL	PI	$599,996	$599,996
01/2024 – 12/2027	Using Depletion Sensitivity Analysis to Better Characterize Reactor Fuel Cycles	NRC	PI	$500,000	$500,000
Total				**$28,809,985**	**$4,114,652**

Invited Seminars since 2018:

2019 1. **Massachusetts Institute of Technology**
"Methods for Sensitivity and Uncertainty Analysis in the Nuclear Engineering Applications," 02/25/19.

2019 2. **University of New Mexico, ANS Student Section**
"Public Speaking Mini-Workshop," 04/02/19.

2019 3. **University of New Mexico, ANS Student Section**
"Adulting 101: A Guide to Basic Financial Literacy," 04/25/19.

2019 4. **University of New Mexico, ANS Student Section**
"C++ Coding Workshop," 07/28/19.

2019 5. **Science on Tap** (an approachable technical lecture series hosted by Explora, UNM, and the National Museum of Nuclear Science and History)
"Fact VS Fiction in HBO's Chernobyl," 09/05/19.

2019 6. **Virginia Commonwealth University**
"Methods for Sensitivity and Uncertainty Analysis in the Nuclear Engineering Applications," 11/15/19.

2020 7. **University of Michigan MTV Summer School for the NNSA Consortia on Monitoring, Technology and Verification**
"Introduction to Monte Carlo Methods," 06/17/20.

2020 8. **University of Michigan MTV Summer School for the NNSA Consortia on Monitoring, Technology and Verification**
"Methods for Sensitivity and Uncertainty Analysis in the Nuclear Engineering Applications," 06/19/20.

2020 9. **ANS Trinity Local Section – Lightning Talk Series**
"Methods for Sensitivity and Uncertainty Analysis in the Nuclear Engineering Applications," 09/18/20.

2020 10. **American Nuclear Society Division Seminar Series**
"Uncertainty Quantification in Nuclear Engineering Applications," to be hosted by ANS National soon – also privately available at:
https://www.youtube.com/watch?v=cL6FIWItn_E

2020 11. **University of New Mexico, Nuclear Engineering Graduate Seminar and Mid-tenure Review**
"Sensitivity and Uncertainty Analysis in Applied Radiation Transport," 11/17/20.

2020 12. **University of New Mexico, ANS Student Section**
"Graduate School 101," 11/18/20.

2021 13. **University of New Mexico, ANS Student Section**
"Public Speaking Mini-Workshop," 04/07/21.

2021 14. **Oregon State University, Nuclear Science and Engineering Graduate Seminar**
"Methods for Sensitivity and Uncertainty Analysis in Nuclear Engineering Applications," 04/29/21.

2021 15. **University of New Mexico, ANS Student Section**
"Adulting 101: A Guide to Basic Financial Literacy," 05/07/21.

2021 16. **Los Alamos National Laboratory's Nuclear Data Working Group**
"Nuclear Data Calibration Methods in the NNSA's Consortium for Modeling, Technology, and Verification," 07/12/21.

2021 17. **University of New Mexico, Nuclear Engineering Graduate Seminar**
"Sensitivity and Uncertainty Analysis in Applied Radiation Transport," 08/31/21.

2021 18. **University of New Mexico, ANS Student Section**
"Talking about Stuff: Public Speaking Tips for Conferences, Networking, and Nuclear Advocacy," 11/12/21.

2022 19. **American Nuclear Society Members-Only Webinar**
"A Reactor Physicist's Explanation of Chernobyl," 04/26/22.
➔ Audience included 699 registrants and 445 unique, live viewers, making this the largest ANS Webinar to date.

2022 20. **Science on Tap** (an approachable technical lecture series hosted by Explora, UNM, and the National Museum of Nuclear Science and History)
"A Brief History of Nuclear Reactor Accidents," 04/28/22.

2022 21. **Los Alamos National Laboratory Summer Student Seminar**
"Sensitivity and Uncertainty Analysis in Applied Radiation Transport," 06/27/22.

2022 22. **National Criticality Experiments Research Center Futures Workshop**
"Reactors: Space/Micro/Naval Reactors" Focus Area Co-Lead, 09/07/22 – 09/09/22.

2022 23. **TerraPower, LLC**
"Sensitivity and Uncertainty Analysis in Applied Radiation Transport," 09/27/22.

2022 24. **University of New Mexico, Nuclear Engineering Graduate Seminar and Tenure Review Seminar**
"Sensitivity and Uncertainty Analysis in Applied Radiation Transport," 10/25/22.

2022 25. **Science on Tap** (an approachable technical lecture series hosted by Explora, UNM, and the National Museum of Nuclear Science and History)
"The Conflict at Zaporizhzhia and A Brief History of Nuclear Reactor Accidents," 10/28/22.

2022 26. **University of New Mexico, Nuclear Engineering Graduate Seminar**
"Talking about Stuff: Public Speaking Tips for Conferences, Networking, and Nuclear Advocacy," 12/06/22.

2023 27. **University of Michigan, Consortium on Modeling, Technology, and Verification**
"DEI Initiatives and Successes Panel," 03/22/23.

2023 28. **University of New Mexico, ANS Student Section**
"Public Speaking Mini-Workshop," 03/24/23.

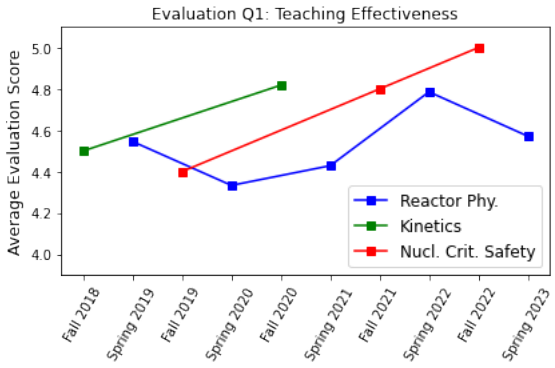
2023 29. **National Museum of Nuclear Science and History**
"A Reactor Physicist's Explanation of the Chernobyl Accident," 04/28/23.

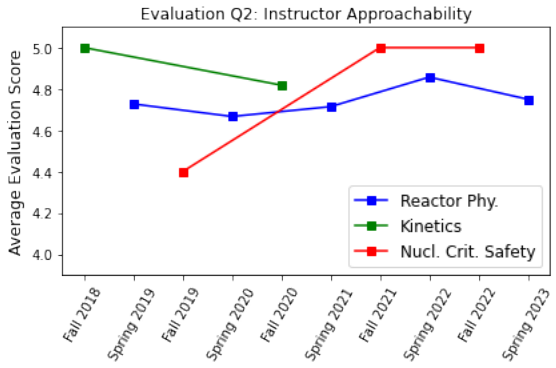
2023 30. **University of Michigan MTV Summer School for the NNSA Consortia on Monitoring, Technology and Verification**
"Nuclear Data Evaluation and Integral Experiment Design," 07/20/23.

2023 31. **Los Alamos National Laboratory – MCNP Team Seminar**
"Sensitivity and Uncertainty Analysis in Applied Radiation Transport," 08/03/23.

2023 32. **Los Alamos National Laboratory – Nuclear Criticality Safety Division Seminar**
"Sensitivity and Uncertainty Analysis in Applied Radiation Transport," 08/03/23.

Teaching Evaluations:





Course	Course Name	Term	Eval. Q1	Eval. Q2
NE 515	Nuclear Reactor Kinetics and Dynamics	Fall 2018 (5 students)	4.50	5.00
NE 410/510	Nuclear Reactor Physics	Spring 2019 (23 students)	4.55	4.73
NE 499/515	Nuclear Criticality Safety	Fall 2019 (17 students)	4.40	4.40
NE 410/510	Nuclear Reactor Physics	Spring 2020 (16 students)	4.33	4.67
NE 499/515	Nuclear Reactor Kinetics and Dynamics	Fall 2020 (12 students)	4.82	4.82
NE 410/510	Nuclear Reactor Physics	Spring 2021 (27 students)	4.43	4.71
NE 499/515	Nuclear Criticality Safety	Fall 2021 (15 students)	4.80	5.00
NE 410/510	Nuclear Reactor Physics	Spring 2022 (23 students)	4.79	4.86
NE 499/515	Nuclear Criticality Safety	Fall 2022 (14 students)	5.00	5.00
NE 410/510	Nuclear Reactor Physics	Spring 2023 (18 students)	4.57	4.75
Overall†			**4.64 / 5.00**	**4.80 / 5.00**

† **Scores weighted evenly based on the number of submitted evaluations.**

Evaluation Question 1: Please rate the instructor's overall teaching effectiveness.

Evaluation Question 2: How comfortable do you feel approaching the instructor with questions or comments?

5 = Highly Effective 4 = Effective 3 = Unsure 2 = Ineffective 1 = Highly Ineffective

Publications:

*** Indicates Graduate Student Mentee**

Refereed Journal Articles

2023 1. A. Maldonado*, **C. M. Perfetti**, "Utilizing Sensitivity and Correlation Coefficients from MCNP and Whisper to Guide Microreactor Experiment Design," *Nucl. Sci. & Eng*. (2023). DOI: 10.1080/00295639.2022.2162782

2023 2. **C. M. Perfetti**, B. C. Franke, R. P. Kensek, A. J. Olson, "Sensitivity Analysis in Coupled Monte Carlo Radiation Transport Simulations," *Nucl. Sci. & Eng*. (2023). DOI: 10.1080/00295639.2023.2184192

2022 3. M. Olguin*, **C. M. Perfetti**, F. B. Brown, "Investigation of the AGN-201M Research Reactor's Unique Dominance Ratio," *Nucl. Sci. & Eng*. DOI: 10.1080/00295639.2022.2087831

2022 4. K. A. Hinrichs*, **C. M. Perfetti**, S. P. LaMont, "SCALE Modeling of Foil Irradiations at WSU's TRIGA with Sensitivity/Uncertainty Analysis," *Journal of Radioanalytical and Nuclear Chemistry*. DOI: 10.1007/s10967-022-08575-9

2022 5. D. H. Timmons*, **C. M. Perfetti**, M. E. Rising, "Using an Adjoint-based Importance Map to Reduce Fission Multiplicity Tally Variance," *submitted to Nucl. Sci. & Eng*.

2022 6. B. Riedel*, **C. M. Perfetti**, F. B. Brown, "Comparison of the Baseline USL Calculation Methods for Loosely Coupled and Novel Neutronic Systems," *submitted to Nucl. Sci. & Eng*.

2022 7. D. H. Timmons*, M. E. Rising, **C. M. Perfetti**, "Subcritical Benchmark Simulations in MCNP using High Fidelity Physics Models," *submitted to Nucl. Sci. & Eng*.

2022 8. D. H. Timmons*, M. E. Rising, A. K. Prinja, **C. M. Perfetti**, "Critical Benchmarks Simulations in MCNP using High Fidelity Fission Physics Models," *submitted to Nucl. Sci. & Eng*.

2022 9. M. Moreno*, **C. M. Perfetti**, D. Redhouse, "Monte Carlo Perturbation Analysis of Fuel Temperature Variance in the MCNP Model of the Annular Core Research Reactor," *submitted to Nucl. Tech*.

2021 10. C. A. Weaver*, G. W. Cooper, **C. M. Perfetti**, D. Ampleford, G. Chandler, P. Knapp, M. Mangan, J. Styron, "A Forward Analytic Model of Neutron Time-of-Flight Signals with Single Elastic Scattering and Beamline Attenuation for Inferring Ion Temperatures from MagLIF Experiments," *Fusion Sci. & Tech*, 78(2), 119-133 (2021). DOI: 10.1080/15361055.2021.1961540

2019 11. **C. M. Perfetti**, B. T. Rearden, "Estimating Code Biases for Criticality Safety Applications with Few Relevant Benchmarks," *Nucl. Sci. Eng*., 193, 10, 1090–1128 (2019). DOI: 10.1080/00295639.2019.1604048

Prior to arrival at UNM

2017 12. J. A. Favorite, Z. Perkó, B. C. Kiedrowski, **C. M. Perfetti**, "Adjoint-Based Sensitivity and Uncertainty Analysis for Density and Composition: A User's Guide," *Nucl. Sci. Eng*., 185, 3, 384–405 (2017). DOI: 10.13182/NSE07-A2666

2017 13. **C. M. Perfetti**, B. T. Rearden, W. J. Marshall, "Diagnosing Undersampling in Monte Carlo Eigenvalue and Flux Tally Estimates," *Nucl. Sci. Eng.*, 185, 1, (2017). DOI: 10.13182/NSE16-54

2016 14. **C. M. Perfetti**, B. T. Rearden, "Development of a Generalized Perturbation Theory Method for Uncertainty and Sensitivity Analysis using Continuous-Energy Monte Carlo Methods," *Nucl. Sci. Eng.*, 182, 3, 354–368 (2016). DOI: 10.13182/NSE15-13

2016 15. **C. M. Perfetti**, B. T. Rearden, and W. R. Martin, "SCALE Continuous-Energy Eigenvalue Sensitivity Coefficient Calculations," *Nucl. Sci. Eng.*, 182, 3, 332–353 (2016). DOI: 10.13182/NSE15-12

2013 16. M. Salvatores, G. Palmiotti, G. Aliberti, R. McKnight, P. Archier, C. De Saint Jean, E. Dupont, M. Herman, M. Ishikawa, K. Sugino, T. Ivanova, E. Ivanov, S. J. Kim, I. Kodeli, A. Trkov, G. Manturov, S. Pelloni, **C. M. Perfetti**, B. T. Rearden, A. Plompen, D. Rochman, W. Wang, H. Wu, W. S. Yang, "Methods and issues for the combined use of integral experiments and covariance data: results of a NEA international collaborative study", *Nuclear Data Sheets*, 118, 38–71 (2013). DOI: 10.1016/j.nds.2014.04.005

Refereed, Full-Length Conference Papers

2023 1. B. R. Murphy*, **C. M. Perfetti**, "Continuous-Energy Depletion Sensitivity Coefficients in OpenMC," *Proc. M&C 2023* (2023).

2023 2. M. Olguin*, **C. M. Perfetti**, B. C. Franke, A. J. Olson, "GEAR-MC Generalized Sensitivity Analysis with Electron-Photon Transport in the Integrated TIGER Series," *Proc. M&C 2023* (2023).

2023 3. M. J. Lazaric*, **C. M. Perfetti**, "Resonance Parameter Sensitivity Translation from the Pole Representation to R-Matrix," *Proc. M&C 2023* (2023).

2023 4. C. A. Weaver*, **C. M. Perfetti**, M. E. Rising, "Fixed Source CLUTCH Calculations in MCNP," *Proc. M&C 2023* (2023).

2023 5. T. Robertson*, J. L. Alwin, **C. M. Perfetti**, R. Bulso*, "Application of a Density Law via Python for Aqueous Plutonium Nitrate Systems in MCNP6," *accepted to ICNC 2023* (2023).

2023 6. R. Bulso*, J. L. Alwin, **C. M. Perfetti**, T. Robertson*, K. Aldrich, T. Cutler, D. Kimball, J. Bunsen, L. Worl, "Application of an Empirical Density Law via Python for Aqueous Plutnoium Chloride Systems in MCNP6," *accepted to ICNC 2023* (2023).

2023 7. R. Davis*, **C. M. Perfetti**, F. B. Brown, "A High-Fidelity Benchmark of the AGN-201M Reactor at the University of New Mexico," *accepted to ICNC 2023* (2023).

2023 8. B. Riedel*, **C. M. Perfetti**, L. L. Wetzel, C. A. Willis, S. J. Henderson, F. B. Brown, S. J. Henderson, D. G. Bowen, "The Construction of a Quantitative Comparison of Upper Subcritical Methods for Novel Neutronic Systems," *accepted to ICNC 2023* (2023).

2022 9. **C. M. Perfetti**, "The University of New Mexico's Online Nuclear Criticality Safety Course Material," *Proc. of the Nuclear Criticality Safety Division Topical Meeting (NCSD 2022).*

2022 10. **C. M. Perfetti**, S. J. Henderson, R. D. Busch, J. A. Miller, F. B. Brown, "A Comparison of Sensitivity/Uncertainty-Based Upper Subcritical Limit Estimates," *Proc. of the Nuclear Criticality Safety Division Topical Meeting (NCSD 2022).*

2022 11. R. Davis*, **C. M. Perfetti**, F. B. Brown, C. A. Willis, S. J. Henderson, R. D. Busch, L. L Wetzel, "Developing a High-Fidelity Benchmark of the UNM AGN-201M Reactor," *Proc. of the Nuclear Criticality Safety Division Topical Meeting (NCSD 2022)*.

2022 12. B. Riedel*, **C. M. Perfetti**, F. B. Brown, "Comparison Study of the Baseline USL Calculation Methods for Loosely-Coupled and Novel Neutronic Systems," *Proc. of the Nuclear Criticality Safety Division Topical Meeting (NCSD 2022)*.

2022 13. D. H. Timmons*, M. E. Rising, **C. M. Perfetti**, F. B. Brown, "Generating Adjoint-based Importance Maps in MCNP," *Proc. of the Nuclear Criticality Safety Division Topical Meeting (NCSD 2022)*.

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