

Sara A. Pozzi

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EDUCATION

- 2001 Ph.D., Science and Technology of Nuclear Plants, Polytechnic of Milan, Italy
Thesis: *Fast Time-Correlation Measurements in Nuclear Safeguards*
Marzio Marseguerra, advisor
- 1997 M.S. (Laurea), Nuclear Engineering, Polytechnic of Milan, Italy
Thesis: *A Directional High Efficiency Monitor for Neutrons*
Marzio Marseguerra, advisor

PROFESSIONAL EXPERIENCE

Current Positions at University of Michigan

- 2015 – present Professor w/tenure, Dept. of Nuclear Engineering and Radiological Sciences
- 2019 – present Founding Director, Consortium for Monitoring, Technology, and Verification (website <http://mtv.engin.umich.edu/>)
- 2018 – present Professor, Department of Physics
- 2018 – present Director, Diversity, Equity, and Inclusion, College of Engineering
- 2014 – 2020 Founding Director, Consortium for Verification Technology (website: <http://cvt.engin.umich.edu>)
- 2007 – present Founder and leader of the Detection for Nuclear Nonproliferation Group, (group website: <http://dnng.engin.umich.edu/>)

Previous Positions at University of Michigan

- 2010 – 2015 Associate Professor w/tenure, Department of Nuclear Engineering and Radiological Sciences
- 2007 – 2010 Associate Professor w/out tenure, Department of Nuclear Engineering and Radiological Sciences

Positions at other institutions or organizations

- 1 – 11/2007 Senior Research Staff, Oak Ridge National Laboratory
- 2006 – 2008 Adjunct Assistant Professor, University of Tennessee
- 2004 – 2006 Research Staff, Oak Ridge National Laboratory
- 2002 – 2004 Postdoctoral Research Associate, Oak Ridge National Laboratory
- 2001 – 2002 Postdoctoral Researcher, Polytechnic of Milan, Italy

HONORS AND AWARDS

- 2020 Fellow, Institute of Electrical and Electronics Engineers (IEEE)
- 2019 Cislser Lecture, Lawrence Technological University
- 2018 Fellow, Institute of Nuclear Materials Management

- 2018 Rackham Distinguished Mentor Award, University of Michigan
- 2017 Fellow, American Nuclear Society
- 2016 IEEE-NPSS Distinguished Lecturer
- 2016 Fall Ohanian Lecture, Herbert Wertheim College of Engineering, University of Florida
- 2016 Elsevier, Selected for Virtual Special Issue on Women in Physics
- 2012 Institute of Nuclear Materials Management, Edway R. Johnson Meritorious Service Award
- 2012 UM Nuclear Engineering and Radiological Sciences Department, Outstanding Achievement Award
- 2009 Institute of Nuclear Materials Management Central Region Chapter, Special Service Award
- 2006 Oak Ridge National Laboratory Early Career Award for Engineering Accomplishment
- 2006 Scientific and Technical Award, Oak Ridge National Laboratory, Nuclear Science and Technology Division
- 2006 Community Outreach Award, Oak Ridge National Laboratory, Nuclear Science and Technology Division
- 2006 Department of Energy, Office of Science, Outstanding Mentor Award
- 2005 Scientific and Technical Award, Oak Ridge National Laboratory, Nuclear Science and Technology Division
- 2005 Finalist (top 3) for the Oak Ridge National Laboratory Early Career Award for Engineering Accomplishment
- 2004 Certificate of Recognition; IEEE Nuclear and Plasma Sciences Society Radiation Instrumentation Early Career Award

RESEARCH EXPERIENCE - SUMMARY

- Over 20 years of experience in research and development in the areas of nuclear engineering, nuclear nonproliferation and safeguards, and Monte Carlo methods development
- Founding Director of the Detection for Nuclear Nonproliferation Group, University of Michigan
 - Directs ~25 researchers including PhD students, postdoctoral scholars, and research scientists
- Impact:
 - Developed new techniques for neutron measurements that are being adopted by the International Atomic Energy Agency
 - Co-developed the MCNPX-PoliMi code, which is being used at over 50 institutions worldwide. The article that describes this code has over 300 citations
 - Authored or co-authored over 415 peer-reviewed journal publications and conference proceedings. H-index 27; i-10 index 90 (source: Google scholar accessed on 1/7/20)
 - Graduated 23 PhDs as chair or co-chair

- Principal investigator of multiple research grants including project leadership in multidisciplinary proposals involving other top institutions, industry, and national laboratories
 - Developed and sustained a very successful and diversified research portfolio totaling approximately 65 M\$ since 2008, including two 25 M\$ university consortia (cvt.engin.umich.edu; mtv.engin.umich.edu).

ADMINISTRATIVE LEADERSHIP EXPERIENCE - SUMMARY

- **Founding Director** of the Consortium for Monitoring, Technology, and Verification (MTV) (14 universities and 11 national laboratories working together to develop new technologies needed for nuclear nonproliferation) 2019-present
 - Successfully competed for the MTV, funded by Department of Energy, NNSA
 - Directs the work of 29 faculty members and over 200 students engaged in multi-disciplinary research projects within the MTV
 - Promotes the activities of the MTV with sponsors and stakeholders
 - Funded at the level of 25 M\$ + 3 M\$ cost share over 5 years
- **Founding Director** of the Consortium for Verification Technology (CVT) (12 universities and 9 national laboratories working together to develop new technologies needed for nuclear treaty verification) 2014-2020
 - Successfully competed for the CVT, funded by Department of Energy, NNSA
 - Directs the work of 25 faculty members and over 200 students engaged in multi-disciplinary research projects within the CVT
 - Promotes the activities of the CVT with sponsors and stakeholders
 - Funded at the level of 25 M\$ + 1.5 M\$ cost share over 6 years
- **Impact:**
 - Trained and transitioned 43 PhD students and postdoctoral researchers to successful careers in academia, the national laboratories, industry, and government
 - Transitioned new technologies to industry, national laboratories, and government stakeholders
- **Director** (inaugural) of Diversity, Equity, and Inclusion (DEI) for the College of Engineering, UM
 - Responsible for leading the implementation of the College of Engineering strategic plan for DEI for students, faculty, and staff
 - Chairs the Implementation Committee, consisting of 4 Associate Deans and several senior staff members
- **Impact:**
 - Led the release of climate survey results for faculty and students
 - Led the development and execution of a plan to improve the climate for all faculty of the College of Engineering

- **Chair** of the Graduate Program, NERS (2013-2018)
 - Provided support/guidance to ~100 PhD students in the department
 - Initiated programs to diversify the graduate student population in NERS
 - Led the annual PhD recruiting process
 - Reported to Rackham (bi-annual meetings) and to College of Engineering (monthly meetings)
 - Met with graduate student committee and all graduate students twice per year
 - Reported to NERS faculty at faculty meetings (monthly meetings)
 - Addressed areas of concern to PhD students including climate and retention (ongoing)
- **Impact:**
 - PhD program selectivity increased from 36% in 2014 to 31% in 2018 and the yield (students accepting/students offered) increased from 53% to 73% in that same timeframe
 - Received recognition of a Rackham Merit Fellowship allocation
- Member, Board of Directors, Michigan Opera Theatre, major opera company in Michigan based in Detroit, MI

PROFESSIONAL SERVICE EXPERIENCE - SUMMARY

- Editor for major journals in the field of nuclear engineering
 - **Executive editor** for Annals of Nuclear Energy (2017-present)
 - **Guest editor** for Nuclear Instruments and Methods Section A (multiple years)
- Elected member of the **Administrative Committee** for the IEEE Nuclear and Plasma Sciences Society (2018-2021)
- Organized **major international conferences and program reviews**
 - IEEE Nuclear Science Symposium Co-Chair, Boston, 2020
 - IEEE Nuclear Science Symposium Co-Chair, Atlanta, 2017
 - University-Industry Technical Interchange (DOE-NNSA program review), 2018
- **National Laboratory external advisory board** member
 - Los Alamos National Laboratory
 - Brookhaven National Laboratory

PROFESSIONAL ACTIVITIES

Service at the Department Level

- Chair of the Graduate Program (Doctoral), Department of Nuclear Engineering and Radiological Sciences, 2013 – 2018
- Chair of the Promotion Committee for an Assistant Research Scientist in the Department of Nuclear Engineering and Radiological Sciences 2012-2013

- Member of the Faculty Search Committee for the Department of Nuclear Engineering and Radiological Sciences, 2012– 2016
- Member of the Graduate Program Committee for the Department of Nuclear Engineering and Radiological Sciences, 2012– 2013
- Member of the Chair Search Advisory Committee for the Department of Nuclear Engineering and Radiological Sciences, 2010
- Member of the Department of Nuclear Engineering and Radiological Sciences Executive Committee, 2008 – 2011
- Member of the Department of Nuclear Engineering and Radiological Sciences @ 50 Planning Committee, 2008
- Member of the Department of Nuclear Engineering and Radiological Sciences Committee for the Evaluation of the Candidacy Exam, 2010 – 2011

Service at the College of Engineering Level

- Director of Diversity, Equity, and Inclusion (DEI), 2018-present
- Chair, DEI Implementation Committee, 2018-present
- Co-chair Mobility and Transportation Committee, 2018-2019
- Member, College of Engineering, Electrical Engineering and Computer Science Department, Review, 2019-2020
- Member, College of Engineering, Electrical Engineering and Computer Science Department, Committee for Promotion from Associate to Full Professor, 2019-2020
- Member, College of Engineering, Research scientist promotion committee, Department of Climate and Space Sciences, 2018-2019
- Member, College of Engineering Department Chair Search, Electrical and Computer Engineering, 2017-2018
- Member, College of Engineering Advance Advisory Board, 2015-2017
- Member, College of Engineering Research Advisory Committee, 2015-present
- Member, University of Michigan Advanced Research Computing Advisory Team, 2013-present
- Member, Faculty Committee on Discipline (College of Engineering), 2011 – 2015
- Member, Entrepreneurship Task Force (College of Engineering), 2011
- Member, University of Michigan College of Engineering, Dean’s Advisory Committee on Diversity, 2011 – 2012
- Member, Dean’s Advisory Committee on Female Faculty, 2013- 2015

Service at the University Level

- Member, STRIDE (Committee on Strategies and Tactics for Recruiting to Improve Diversity and Excellence), 2016-present
- Member, Rackham Graduate Mentoring Award Committee, 2018-2020
- Member, Rackham Merit Fellowship Committee, 2017-2019
- Faculty Mentor for the Japan-US Advanced Collaborative Education Program, Nagoya University, 2013- present
- Member, Advisory Board Michigan Memorial Phoenix Project, 2012 – present
- Member, International Programs Committee (College of Engineering), 2011 – present

- Member, University of Michigan College of Engineering, Internal Task Force Meeting, 2012–present
- Marshall for the Graduations (ongoing)

Professional Societies

- Fellow, Institute of Nuclear Materials Management
- Fellow, American Nuclear Society
- Senior member, IEEE Nuclear and Plasma Sciences Society

Conference Organizer

- Program Chair, IEEE – Nuclear Science Symposium, Boston, MA, 2020
- Deputy Program Chair, IEEE- Nuclear Science Symposium, Atlanta, GA, 2017
- Associate Chair, Symposium on Radiation Measurements and Applications, Ann Arbor, MI, 2014, 2018

Short Courses and Workshops Organized and Taught

1. “Standoff Detection Techniques for Radiological and Nuclear Sources,” IEEE Nuclear Science Symposium and Medical Imaging Conference, Dresden, Germany, October 24-25, 2008
2. “MCNP-PoliMi Training Workshop,” 2010 American Nuclear Student Conference, University of Michigan, Ann Arbor, Michigan, April 9, 2010, enrollment: 30, workshop organizer
3. “MCNPX-PoliMi Training Workshop,” University of Michigan, Ann Arbor, August 23-24, 2011, enrollment: 15, workshop organizer and primary lecturer
4. “2nd MCNPX-PoliMi Training Workshop,” University of Michigan, Ann Arbor, July 25-26, 2012, enrollment: 15, workshop organizer and primary lecturer
5. “3rd MCNPX-PoliMi Training Workshop,” University of Michigan, Ann Arbor, July 24-26, 2013, enrollment: 15, workshop organizer and primary lecturer
6. “Nuclear Technology: the Power and the Peril,” University of Michigan, Ann Arbor, October 10, 2013 (co-organized with Ford School of Public Policy and INMM student chapter)
7. “4th MCNPX-PoliMi Training Workshop,” University of Michigan, Ann Arbor, June 13, 2014, workshop organizer and primary lecturer
8. “MCNP Applications,” IEEE/Nuclear Science Symposium Shortcourse, 2014, workshop organizer and primary lecturer
9. Consortium for Verification Technology (cvt.engin.umich.edu) Kickoff Workshop, 10/2014, workshop organizer
10. “MCNPX-PoliMi Training Workshop,” University of Michigan, Ann Arbor, June 2015, workshop organizer and lecturer
11. Consortium for Verification Technology (cvt.engin.umich.edu) Workshop, 10/2015, workshop organizer
12. “Digital Pulse Shape Discrimination,” IEEE/Nuclear Science Symposium Shortcourse Module, 2015, workshop lecturer

13. "MCNP/MCNPX-PoliMi Training Workshop," University of Michigan, Ann Arbor, 2016, workshop co-organizer
14. Consortium for Verification Technology Workshop, 10/2016, workshop organizer
15. "Digital Pulse Shape Discrimination," IEEE/Nuclear Science Symposium Shortcourse Module, 2017, workshop lecturer
16. Consortium for Verification Technology Workshop, 11/2017, workshop organizer
17. Consortium for Verification Technology Workshop, 10/2018, workshop organizer

Technical Program Committees

- FIESTA Fission School and Workshop, Santa Fe, NM, September 18-22, 2017
- International Conference on Advancements in Nuclear Instrumentation Measurement Methods and their Applications, Liège, Belgium, June 19-23, 2017
- Symposium on Radiation Measurements and Applications, Ann Arbor, MI, 2014
- PHYSOR 2014, Track Leader for Track 13: Radiation Applications and Nuclear Safeguards, Kyoto, Japan, 2014
- IEEE Nuclear Science Symposium and Medical Imaging Conference, Anaheim, California, October 29 – November 3, 2012
- Advancements in Nuclear Instrumentation, Measurement Methods and their Applications (ANIMMA 2011)
- Symposium on Radiation Measurements and Applications, Ann Arbor, MI, 2010
- Advancements in Nuclear Instrumentation, Measurement Methods and their Applications (ANIMMA 2009)
- International Conference on Advances in Mathematics, Computational Methods, and Reactor Physics (M&C 2009)
- American Nuclear Society Sixth International Topical Meeting on Nuclear Plant Instrumentation, Control, and Human-Machine Interface Technologies (NPIC&HMIT 2009)
- PHYSOR 2008 Track No. 15: Radiation Applications & Nuclear Safeguards (2008)
- Member of the INMM Central Chapter Technical Program Committee (2007)
- Hold-up Measurement Workshop, Oak Ridge National Laboratory (ORNL) October 29 – November 3, 2006
- INMM Central Chapter Technical Program Committee (2005)
- ANS - Monte Carlo 2005 Technical Program Committee (2005)
- Membership Committee of the American Nuclear Society's Mathematics and Computation Division (2005)

Leadership Positions in Professional Organizations

- Faculty advisor and founder of the first Institute of Nuclear Materials Management Student Chapter at the University of Michigan (2008 – present)
- Chair of the Honors and Awards Committee of the Radiation Instrumentation Steering Committee of the IEEE Nuclear and Plasma Sciences Society (2007 – 2015)

- Member-at-Large of the Institute of Nuclear Materials Management (2010 – 2012)
- Chair of the Communications Committee of the Institute of Nuclear Materials Management (INMM) (2005 – 2010)
- Member of the Radiation Instrumentation Steering Committee of the IEEE Nuclear and Plasma Sciences Society (2005 – 2009)
- Member of the Students Activities Committee, Institute of Nuclear Materials Management (2005 – present)
- Member-at-Large of the Institute of Nuclear Materials Management Central Chapter (2004 – 2012)
- Editor of the INMM Communicator, online newsletter of the Institute of Nuclear Materials Management (2003 – 2008)
- Member of the Executive Committee of the American Nuclear Society's Mathematics and Computation Division (2006 – 2011)
- Head of the Student Activities Committee for the Central Chapter of the Institute of Nuclear Materials Management (2005 – 2010)

Working Groups

- Department of Energy Global Nuclear Energy Partnership: Safeguards, 2008
- European Safeguards Association; Nondestructive Assay Working Group, 2009 – present
- European Safeguards Association; Novel Approaches / Novel Technologies, 2009 – present

National and International Advisory Services

- Nonproliferation and National Security Advisory Committee, Brookhaven National Laboratory, Jan 2018-present
- Engineering Capability Review, Los Alamos National Laboratory, March 2017-present
- Member, Scientific Program Advisory Committee (SPAC) for the Madison Accelerator Laboratory (MAL), 2017-present
- Reviewer for the Italian Evaluation of Research Quality Exercise (2012 – present)
- Member, Expert Advisory Group for the European Union FP7 project SCINTILLA (2011 – 2015)
- Independent Review member for the Department of Energy, National Nuclear Security Administration NA-22 projects (multiple times)

Session Chair (selected)

- IEEE Nuclear Science Symposium and Medical Imaging Conference, Sydney, Australia, 2018
- IEEE Nuclear Science Symposium and Medical Imaging Conference, Atlanta, GA, 2017
- IEEE Nuclear Science Symposium and Medical Imaging Conference, Strasbourg, France, 2016
- ANS Nuclear Nonproliferation Division Topical Meeting, Santa Fe, New Mexico, 2016.

- Institute of Nuclear Materials Management 57th annual meeting, Atlanta, Georgia, July 24-28, 2016
- IEEE Nuclear Science Symposium and Medical Imaging Conference, San Diego, California, November 2015
- Symposium on Radiation Measurements and Applications, Ann Arbor, June 2014
- IEEE Nuclear Science Symposium and Medical Imaging Conference, Seoul, Korea, November 2013
- IEEE Nuclear Science Symposium and Medical Imaging Conference, Anaheim, California, October 29 - November 3, 2012
- IEEE Nuclear Science Symposium and Medical Imaging, Knoxville, Tennessee, October 30 – November 6, 2010
- Institute of Nuclear Materials Management 51th Annual Meeting, Baltimore, Maryland, July 11–15, 2010
- IEEE Nuclear Science Symposium and Medical Imaging Conference, Orlando, Florida, October 25–31, 2009
- Institute of Nuclear Materials Management 50th Annual Meeting, Tucson, Arizona, July 12–16, 2009
- International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009), Saratoga Springs, New York, May 3–7, 2009 (*session chair and session organizer*)
- IEEE Nuclear Science Symposium and Medical Imaging Conference, Dresden, Germany, October 19–25, 2008 (*session chair and session organizer*)
- 20th International Conference on the Application of Accelerators in Research and Industry (CAARI–2008), Fort Worth, Texas, August 10–15, 2008 (*session chair and session organizer*)
- Institute of Nuclear Materials Management 49th Annual Meeting, Nashville, Tennessee, July 13–17, 2008
- IEEE Nuclear Science Symposium and Medical Imaging Conference, Honolulu, Hawaii, October 28–November 5, 2007
- Institute of Nuclear Materials Management Annual Meeting, Tucson, Arizona, July 8–12, 2007
- American Nuclear Society Annual Meeting, Boston, Massachusetts, June 24–28, 2007
- Joint International Topical Meeting on Mathematics & Computation and Supercomputing in Nuclear Applications (M&C+SNA 2007) Monterey, California, April 15–19, 2007, (*session chair and session organizer*)
- Nuclear Science Symposium, San Diego, California, October 29–November 3, 2006
- PHYSOR 2006, Vancouver, BC, Canada, September 10–14, 2006, (*session chair and session organizer*)
- INMM 46th Annual Meeting, Phoenix, Arizona, July 10–14, 2005

- Monte Carlo 2005 Topical Meeting, Chattanooga, Tennessee, April 17–21, 2005
- INMM Central Chapter Meeting, Oak Ridge, Tennessee, October 11–12, 2005
- INMM 45th Annual Meeting, Orlando, Florida, July 18–22, 2004

Referee Service

- Referee for the scientific journals *IEEE Transactions on Nuclear Science*, *Nuclear Science and Engineering*, *Transport Theory and Statistical Physics*, *Nuclear Instruments and Methods in Physics Research A and B*, *Radiation Measurements*, *Journal of Applied Physics*, *Nature Communications*, ongoing
- Reviewer for the Department of Homeland Security, Academic Research Initiative, 2011.
- Reviewer for the Laboratory Directed Research and Development Program of Oak Ridge National Laboratory, 2007
- Reviewer for the U.S. Department of Energy NA-22 Proliferation Detection Program Broad Agency Announcement, 2011–present
- Reviewer for the Nuclear Energy University Program, U.S. Department of Energy office of Nuclear Energy (DOE-NE), 2010–present
- Reviewer for the U. S. Department of Energy, Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR), 2012
- Reviewer for the U. S. Department of Defense, Defense Threat Reduction Agency, Basic Research for Combating Weapons, 2012–present

Editorial Services

- Executive Editor, *Annals of Nuclear Energy*, 12/2017-present
- Associate Editor, *Progress in Nuclear Energy* 2016-present
- Guest editor, *Nuclear Instruments and Methods A*, Proceedings of the 2014 Symposium on Radiation Measurements and Applications (SORMA)
- Associate Editor, SORMA West 2012 issue of the *IEEE Transactions on Nuclear Science*
- Guest editor, *Nuclear Instruments and Methods A*, Proceedings of the 2010 Symposium on Radiation Measurements and Applications (SORMA)

Media Interviews and Outreach Activities

- Podcast, Partnering for Nuclear Nonproliferation, March 2018
<http://engineering.oregonstate.edu/s5-e6-partnering-nuclear-nonproliferation>
- Saturday Morning Physics, University of Michigan, February 17, 2018 (~350 people)
- Reddit Ask Me Anything, Nuclear Science AMA, December 6, 2017
<https://doi.org/10.15200/winn.151256.68244> (~800 views)
- Interview, RAI, Italian National Television, 2/2018 (audience ~millions of viewers)
<http://www.stefanosalimbeni.com/2018/03/05/sara-pozzi-energia-pacifica-rai-italia/>
- Interview, SVP Productions, Beyond Productions, Melbourne, Australia, 8/2017 (audience ~millions of viewers)
- Channel News Asia Interview, 4/2016 (audience ~millions of viewers)
- MConnex – UM and Youtube video on Nuclear Engineering Laboratories, 2015
- MConnex – UM video on North Korea Nuclear Tests, 2/2013

- MConnex – UM video on Detecting Nuclear Bombs in the Field, 2012
- Invited talk: “Detection for Nuclear Nonproliferation, November 30, 2015. Lecture to 60 undergraduate students
- Invited talk: “Research Methods in Engineering: Detection for Nuclear Nonproliferation”, November 4, 2014, Undergraduate Research Opportunity Program, University of Michigan. Lecture to 33 undergraduate students

TEACHING

Courses Developed and Taught

Detection Techniques for Nuclear Nonproliferation, NERS 535

The course introduces students to the science and technology associated with nuclear nonproliferation. The students gain a hands-on experience with radiation detectors and their application to nonproliferation. New course.

Nuclear Safeguards, NERS 532

The course covers the history of nuclear safeguards methods, international safeguards policy, and techniques and currently used neutron and gamma ray measurement systems in the areas of nuclear material safeguards. New course.

Radiation Shielding Design, NERS 554

The course covers the design process, characterization of radiation fields, radiation dose to biological Systems and electronics, radiation shielding design, regulatory constraints, secondary radiation generation, detector response functions, Monte Carlo tallies. Significantly revised course.

Students and Postdoctoral Researchers Advised

Chair for the following PhD students (year and present location):

Eric Miller (2012, Johns Hopkins University), Jennifer Dolan (2013, UM Medical Physics residency), Mark Bourne (2015, Endectra), Alexis Trahan (2015, Los Alamos National Laboratory), Alexis Poitrasson-Riviere (2016, INVIA Medical Imaging Solutions), Kyle Polack (2016, Sandia National Laboratories), Bruce Pierson (2016, Pacific Northwest National Laboratory), Marc Paff (2017, Los Alamos National Laboratory), Michael Hamel (2017, Sandia National Laboratories), Marc Ruch (2017, Los Alamos National Laboratory), Mateusz Monterial (2017, Lawrence Livermore National Laboratory), Mark Norsworthy (2017, Remote Sensing Laboratory, Nellis), Charles Sosa (2018, Radiation Monitoring Devices), Matthew Marcath (2018, Los Alamos National Laboratory), Ciara Sivels (2018, Johns Hopkins University), Jennifer Arthur (2019, Los Alamos National Laboratory), Cameron Miller (2019), Tony Shin (2019, Los Alamos National Laboratory), William Steinberger (2020), Christopher Meert (2021), Stefano Marin (2021), Michael Hua (2022), Noora Ba Sunbul (2022), Abbas Jinia (2022)

Co-chair for the following PhD students (year and present location):

Maura Monville (2005), Shaun Clarke (2007, University of Michigan), Andreas Enqvist (2010, University of Florida), Shikha Prasad (2012, IIT Kampur, India), Christopher Lawrence (2014, Harvard University)

M.S. students advised/co-advised (selected):

Stefania Ramoni (2002), Jennifer Dolan (2009), Scott Ambers (2009), Ben Maestas (2009), Tomasz Zak (2009), William Walsh (2009), Mark Bourne (2010), Eric Miller (2010), Alexis Poitrasson-Rivière (2011), Jack Linkous (2012), Kyle Weinfurther (2012), Michael Hamel (2012), Marc Paff (2012), Alicia Salazar (2014), Charles Sosa (2014), Steven Ward (2014), Tony Shin (2014), Athena Sagadevan (2016)

Committee member for the following PhD students:

Steven Anderson (2010), Adrienne Lehnert (2012), Jason Jaworski (2012), Yvan Boucher (2013), Steven Brown (2013), Sonal Joshi (2014), Mohammad Faisal (2014), Michael Febbraro (2014), Zachary Whetstone (2014), Alice Tomanin (2014), Joshua Mann (2016), Michael Streicher (2017), Luca Dioni (2017), David Moore (2017), Erik Fisher (2018), Natasha Sachdeva (2018), Joe Osborn (2018)

Undergraduate students (selected):

Mark Bourne, Kyle Weinfurther, Eleanor Pryser, Radha Argal, Catherine Mussi, Scott Ambers, Chad Gibson, Tony Shin, William Walsh, Alexis Poitrasson-Riviere, Lu Huang, Paul Stanfield, Ben Dennis, Amy Meldrum, Brett Hamel, Victoria Bracht, Lauren D’Cruz, Joseph Cho, Jeremy Ross, Matthew O’Callaghan, Alex Marmorale, Dietrich Klem, Jeffrey Whaley, Nick Adamowicz, Alex McSpaden, Tyler Jordan, Emily King, Kyle Beyer

Research staff supported and mentored (current position):

Dr. Shaun Clarke, Associate Research Scientist, Dr. Patricia Schuster, UM President’s Postdoctoral Fellow, Dr. Mark Bourne, Postdoctoral Fellow (Endectra, LLC), Dr. Marc Paff, Postdoctoral Fellow (LANL), Dr. Lazar Supic, Postdoctoral Fellow, Dr. Angela Di Fulvio Assistant Research Scientist (Assistant Professor, University of Illinois), Dr. Marek Flaska, Associate Research Scientist (Assistant Professor, Penn State University), Dr. Andreas Enqvist, Assistant Research Scientist (Assistant Professor, University of Florida), Dr. Syed Naeem, Postdoctoral Fellow (Chalmers University)

FUNDED RESEARCH PROJECTS

Past Projects

1. Compact Source of Laser-Driven Monoenergetic Gamma-Rays, Department of Defense, Defense Threat Reduction Agency, 9/30/13 – 5/13/14, \$178,229, UM PI: Sara Pozzi, PI: Donald Umstadter (University of Nebraska) (Pozzi share \$178,229)
2. IFind Mobile Detection System, FLIR, DOD/DTRA, 2/12 – 5/13, \$204,918 UM PI: Sara Pozzi
3. Liquid Scintillator Multiplicity Counter, DOE NNSA, 12/09/2011 – 9/30/2013, \$ 200,000 UM-PI: Sara Pozzi, PI: David Chichester (Idaho National Laboratory)
4. Epithermal- and Fast-Neutron Detection System for Active- and Passive-Measurement Applications for National Security and Nuclear Energy, DOE Office of Science, 11/11 – 11/13, \$ 188,000, PI: Sara Pozzi
5. Basic Physics Data: Improved Fission Neutron Multiplicity, DOE NEUP, 9/2011 – 9/2014, \$954,000, PI: Sara Pozzi, Co-PI Robert Haight, LANL (Pozzi share \$750,000)
6. Energy-Angle Correlation in Spontaneous-and Induced-Fission Neutron Emissions, DOE NA-22, 6/11 – 6/14, \$900,000, PI: Sara Pozzi, Co-PI: Robert Haight, LANL (Pozzi share \$720,000)
7. IFind Mobile Detection System, ICX, DOD/DTRA, 3/11 – 2/12, \$110,000 UM PI: Sara Pozzi

8. Neutron Interrogation for Fuel Cycle Measurements, Department of Energy, NNSA NA 243, 1/11 – 9/11, \$ 101,276, UM PI: Sara Pozzi, PI: David Chichester (Idaho National Laboratory)
9. Digital Fast Neutron Detection System for Simultaneous Time Correlation and Spectrometry, DOE NA-22, 11/10 – 9/13, \$ 360,818 UM-PI: Sara Pozzi, PI: John Mattingly/Peter Marleau, SNL
10. New University of Michigan Laboratory for Research and Teaching in Nuclear Nonproliferation, 9/1/10 – 8/31/11, \$ 160,000 PI: Sara Pozzi
11. Digital Waveform Sampling of Neutron and Gamma Ray Signals from Scintillators, Stewardship Science Academic Alliances Program, DOE- NNSA, 2/10/ – 2/14, \$490,000 PI: Sara Pozzi
12. Improved Fission Neutron Data Base for Active Interrogation of Actinides, DOE NE- UP, 10/09 – 9/13, \$690,000 PI: Sara Pozzi
13. IFind Mobile Detection System, ICX, DOD/DTRA, 5/09 – 5/11, \$122,000 UM PI: Sara Pozzi
14. A Multisensor Fusion Approach to the Solution of Inverse Radiation Transport Problems, DOE - NA 22, 12/08 – 11/11, \$260,000 UM PI: Sara Pozzi, PI: John Mattingly (Sandia National Laboratories)
15. Measurement and Characterization of Nuclear Material at Idaho National Laboratory, DOE - NA 243, 11/08 – 10/09, \$75,000 UM PI: Sara Pozzi, PI: David Chichester (Idaho National Laboratory)
16. Faculty Development Grant, NRC, 8/08 – 7/11, \$ 300,000 PI: William Martin Co-PIs: Sara Pozzi, Michael Hartman
17. Characterization of the Capture-Gated Liquid Scintillator BC- 523, DOE/Euratom, 7/08 – 12/09, \$68,000 UM PI: Sara Pozzi, PI: Ana Raffo-Caiado (Oak Ridge National Laboratory)
18. Extensive Testing of the TORO Pileup Recovery Technology at the University of Michigan, Southern Innovation, 6/08 – 12/08, \$60,000 PI: Sara Pozzi
19. Monte Carlo Simulations for Tunable, Mono-energetic Gamma ray Source for Detection of Embedded SNM, DNDO, 1/08 – 10/10, \$266,000 UM PI: Sara Pozzi, PI: Donald Umstadter (University of Nebraska)
20. New Detectors, Electronics, and Algorithms for Fast Neutron Spectroscopy in a Scalable Measurement Platform, Academic Research Initiative (National Science Foundation and Department of Homeland Security), 10/09 – 9/15, \$ 2,000,000 PI: Sara Pozzi, Co PI's: Fred Becchetti (UM), David Wentzloff (UM), and Larry Rees (BYU) (Pozzi share \$1,000,000)
21. Development of a New Graduate Level Course in Nuclear Safeguards at the UM NERS Department, 7/30/09 – 12/31/15, \$ 224,236 PI: Sara Pozzi (Pozzi share \$224,236)
22. Neutron Detection for Cancer Therapy, MCubed, 4/2013-4/2014, Cube proposed by PI Sara A. Pozzi, co-PI's Jamie Phillips EECS and Thomas Schwarz physics, \$ 60,000 (Pozzi share \$20,000)
23. Low Dose Tomographic System Based on a Novel Narrowband, Tunable, Multi-meV X-Ray Source, 9/30/13 – 3/31/15, \$190,000, National Strategic Research Institute, University of Nebraska, UM-PI: Sara Pozzi, PI: Donald Umstadter (Pozzi share: \$190,000)

24. Advanced Plastic Scintillators for Nuclear Non-proliferation Monitoring, Department of Energy, Radiation Monitoring Devices, Inc., \$129,962, 8/14/2013-7/13/2015 UM-PI: Sara Pozzi, PI: Kanai Singh (RMD) (Pozzi share \$129,962)
25. Sandia Fellowship, Kyle Polack, 8/1/2013 to 7/31/2015, PI Sara Pozzi, \$ 80,000 (Pozzi share \$80,000)

Current Grants and Contracts

1. Consortium for Monitoring, Technology, and Verification, Department of Energy: NNSA, NA-22, total Award Period Covered: 9/19-9/24, Overall PI: Sara Pozzi, \$25,000,000, Location of project: Michigan and 13 other academic institutions
2. Consortium for Verification Technology, Department of Energy: NNSA, NA-22, Total Award Period Covered: 9/14 – 9/19, Overall PI: Sara Pozzi, \$25,000,000, Location of Project: Michigan and 11 other academic institution (Pozzi share \$2,500,000)
3. Neutron Rodeo, Department of Energy, NNSA, 12/1/17-8/31/18, PI: Sara Pozzi, \$125,000 (Pozzi share: \$125,000)
4. Physics of Fission, Department of Energy, NNSA, 9/1/2016-8/31/2019, PI: Patrick Talou, LANL (Pozzi share: 450,000 \$)
5. Handheld Dual Particle Imager, Department of Defense, Defense Threat Reduction Agency, \$1,000,000 3/1/2017-2/28/2021 PI: Sara Pozzi
6. Fast Neutron Detection for Active Interrogation, Department of Homeland Security, Domestic Nuclear Detection Office, Academic research Initiative, 9/1/2016-8/31/2021, 1,750,000 \$ PI: Sara Pozzi, co-PI David Wentzloff (UM)
7. Dual Particle Imager, DOE-NNSA NA-22, 10/2014-10/2017, \$750,000 PI: Sara Pozzi; co-PIs Marek Flaska, Shaun Clarke (UM) (Pozzi share \$750,000)
8. Developing Accurate Simulations of Correlated Data in Fission Events, DOE-NNSA NA-22, 10/2013-3/2017, \$280,000 UM-PI: Sara Pozzi, PI: Patrick Talou, LANL (Pozzi share \$280,000)

INVITED PRESENTATIONS

1. Invited Panel, “Diversity, Equity and Inclusion at GT, UC Berkeley, and Michigan” NextProf Nexus, Atlanta, GA, October 2019
2. Invited Seminar, “University Consortia for Nuclear Nonproliferation Research,” KAIST, Korea, August 2019
3. Invited Talk and Panel, “Consortium for Verification Technology,” NEREC, Seoul, Korea, August 2019
4. Invited Seminar, Michigan State University, “Recent Accomplishments and Open Challenges in Nuclear Nonproliferation,” April 2019
5. Invited Seminar, “Physics of Nonproliferation,” Public Policy 734, University of Michigan, March 2019
6. Invited Seminar, 2019 Cisler Lecture, Lawrence Technological University, February 2019
7. Invited Seminar, “Science and Technology for Nuclear Nonproliferation”, Albion College, November 2018
8. Invited Talk and Panel, “Excellence and Diversity,” IEEE Nuclear Science Symposium, Sydney, Australia, November 2018
9. Invited Talk, “Detectors and Algorithms for Active Interrogation,” CAARI 2018 conference, Grapevine, Texas, August 2018
10. Invited Seminar, “Neutron Detection for Nonproliferation Applications,” Summer School on Neutron Detectors and Related Applications (NDRA-2018), Riva Del Garda, Trento, Italy, July 2018

11. Invited Talk, "Detection for Nonproliferation," Saturday Morning Physics, Department of Physics, University of Michigan, February 2018
12. Invited Seminar, "Science and Technology for Nuclear Nonproliferation," Georgia Institute of Technology, Atlanta, GA, February 2018
13. Invited Seminar, "Neutron Detection in Proton Therapy for Cancer Treatment," IEEE Distinguished Lecture, University of Trento, Italy, December 2017
14. Invited Seminar, "Radiation Detection for Treaty Verification," Pacific Northwest National Laboratory, September 2017
15. Invited Seminar, "Consortium for Verification Technology Research Activities," IEEE Distinguished Lecture, Pacific Northwest National Laboratory, September 2017
16. Invited Talk, "Consortium for Verification Technology," Institute of Nuclear Materials Management (INMM) Nonproliferation and Arms Control Division Meeting, Indian Wells, CA, July 16-20, 2017
17. Invited Talk, "Consortium for Verification Technology Research Activities," 10th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications (IRRMA-X), Chicago, IL, July 9-13, 2017
18. Invited Talk, "Establishing and Advancing Nonproliferation and Nuclear Policy Education at U.S. Science and Engineering Programs," American Nuclear Society Annual Meeting, San Francisco, CA, June 2017
19. Invited Talk, "Stochastic Models for Fast Neutron Multiplicity Counting of Plutonium," American Nuclear Society Mathematics and Computations Division, Jeju Island, Korea, April 2017
20. Invited Talk, "Consortium for Verification Technology", Defense Nuclear Nonproliferation's Nonproliferation Research and Development (DNN R&D), Washington DC, March 28 - 29, 2017
21. Invited Seminar, 2016 Fall Ohanian Lecture, "Science and Technology for Nuclear Treaty Verification," Herbert Wertheim College of Engineering, University of Florida November 2016
22. Invited Talk, "Detectors for Active Interrogation Applications," 24th International Conference on the Application of Accelerators in Research and Industry, Ft. Worth, TX, USA, Oct. 30 – Nov. 4, 2016. Presented by Shaun D. Clarke
23. Invited Panel Member, "Consortium for Verification Technology," American Nuclear Society, Nuclear Nonproliferation Conference, Santa Fe, NM, September 2016
24. Invited Talk, "From Nuclear Engineering to Homeland Security," COE Advancement, Napa Valley, CA, May 20, 2016
25. Invited Talk, "Measurement of Neutrons in Proton Therapy Applications," Italian Technological Excellence in the U. S., Detroit, MI, May 10, 2016
26. Invited Talk, "Consortium for Verification Technology," University of Michigan, College of Engineering Meeting, Ann Arbor MI, April 2016
27. Invited Seminar, "New Instruments for Safeguards and Nonproliferation," Purdue University, West Lafayette IN, March 2016
28. Invited Talk, "Passive and Active Experiments for Nonproliferation," Rapiscan, Sunnyvale CA, February 11, 2016

29. Invited Talk, "Consortium for Verification Technology," University of Michigan, Knight-Wallace Journalism Fellows, February 2, 2016
30. Invited Talk, "Detection for Nuclear Nonproliferation," International Symposium on Radiation Detection 2016, KEK Tsukuba, Japan, January 20, 2016
31. Invited Seminar, "Applied Nuclear Physics for Nuclear Nonproliferation," Duke University, November 19, 2015
32. Invited Talk, American Nuclear Society Winter Meeting, Panel on University Consortia, Washington DC, November 10, 2015
33. Invited Talk, American Nuclear Society Winter Meeting, Panel on Nuclear Data, Washington DC, November 10, 2015
34. Invited Seminar, "Measurement and Simulation of Secondary Neutron Production during Proton Therapy," OncoRay, Dresden, Germany, April 27, 2015
35. Invited Seminar, "Consortium for Verification Technology," Columbia University, New York, March 11, 2015
36. Invited Seminar, "Measurement and Simulation of Secondary Neutron Production from High-Energy Proton and Photon Beams," University of Michigan Hospital, Ann Arbor, 24 Feb 2015
37. Invited Seminar, "Scintillators for Nuclear Nonproliferation and Nuclear Physics Applications," Lawrence Berkeley National Laboratory, February 3, 2015
38. Invited Seminar, "Consortium for Verification Technology," University of California, Berkeley, February 2, 2015
39. Invited Seminar, "Detection and Characterization of Special Nuclear Material," Polytechnic of Milan, Italy, February 26, 2014
40. Invited Talk, "Neutron Detection for Cancer Therapy," MCUBED Symposium, University of Michigan, November 15, 2013
41. Invited Talk, "Detection Techniques to Counter Nuclear and Radiological Threats," SCINTILLA Workshop (international), Budapest, Hungary, September 2013
42. Invited Talk, "Detection using the New Plastic Scintillator EJ-299-33", Defense Threat Reduction Agency, August 22, 2013
43. Invited Talk, "Fast Neutron Detection with Scintillators for Nuclear Safeguards," He-3 Alternatives Workshop, Los Alamos National Laboratory, June 26, 2013
44. Invited Talk, "Energy-Angle Correlations in Spontaneous-and Induced Fission Neutron Emissions," Department of Energy, University Industry Technical Interface, Lansing, MI, June 6, 2013
45. Invited Seminar, "Protecting our Nation from Nuclear Threats," University of Michigan, Department of Physics, January 29, 2013
46. Invited Seminar, "Detection of Correlated Particles from Fission for Nuclear Safeguards and Nonproliferation," University of Wisconsin, December 11, 2012
47. Invited Talk, "Fast Neutron Spectroscopy," American Nuclear Society Annual Meeting, Chicago, IL, June 26, 2012. (Presented by student: Mark Norsworthy)
48. Invited Seminar, "Measurements and Simulations for Nuclear Safeguards and Nonproliferation," Siemens, Knoxville, TN, June 14, 2012

49. Invited Talk, "Photo-fission Signatures for the Detection of Highly Enriched Uranium," SPIE Defense, Security, and Sensing, Baltimore, Maryland, April 23-27, 2012
50. Invited Panel Member – Embedding Nuclear Security Concepts in the Nuclear Engineering Curriculum, PHYSOR 2012 – Advances in Reactor Physics – Linking Research, Industry, and Education Knoxville, Tennessee, April 15-20, 2012
51. Invited Seminar, "Recent Advances in Detection Techniques for Nuclear Safeguards and Nonproliferation," The University of Michigan, Ann Arbor, MI, March 23, 2012
52. Invited Seminar, "Recent Advances in Detection Techniques for Nuclear Safeguards and Nonproliferation," The Pennsylvania State University, State College, PA, March 15, 2012
53. Invited Seminar, "Introduction to MCNPX-PoliMi," Oak Ridge National Laboratory, November 10, 2011
54. Invited Talk, "Nuclear Nonproliferation and Safeguards Education Program at the University of Michigan," American Nuclear Society Annual Meeting, November 3, 2011
55. Invited Seminar, "Detection of Fast Neutrons for Nuclear Safeguards and Nonproliferation Applications," Pacific Northwest National Laboratory, June 14, 2011
56. Invited Keynote Talk, "Fast Neutron Detection for Nonproliferation Applications," European Safeguards Research and Development Association (ESARDA), Novel Techniques and Novel Approaches Working Group, Budapest, Hungary, May 20, 2011
57. Invited Talk, "Digital Waveform Sampling of Neutron and Gamma Ray Signals from Scintillation Detectors for Pulse Shape Discrimination and Pulse Height Analysis," Stewardship Science Academic Alliances Symposium, Washington D.C., February 15 – 17, 2011
58. Invited Seminar, "Overview of Research Activities in the Detection for Nuclear Nonproliferation Group", Rapsican Laboratories, Sunnyvale, CA, October 22, 2010
59. Invited Seminar, "Detection Techniques for Nuclear Safeguards and Nonproliferation Applications", Oak Ridge National Laboratory, Oak Ridge, TN, August 2, 2010
60. Invited Talk, "Advances in Fast Neutron Detection using Organic Scintillators," European Safeguards Research and Development Association 32nd Annual Meeting, Luxembourg, May 4-6, 2010
61. Invited Seminar, "Detectors, Electronics, and Algorithms for Nuclear Nonproliferation, Safeguards, and Homeland Security Applications," Los Alamos National Laboratory, April 22, 2010
62. Invited Seminar, "Passive and Active Interrogation of Special Nuclear Material," Johns Hopkins University Applied Physics Laboratory, March 16, 2010
63. Invited Seminar, "Grand Challenges in Nuclear Nonproliferation and Safeguards and Ongoing Programs at the University of Michigan," Chalmers University of Technology, Gotenburg, Sweden, February 25, 2010
64. Invited Talk, "University of Michigan Curriculum in Nuclear Nonproliferation and Safeguards," University of Missouri, Institute for Nuclear Materials Management Workshop, February 9-12, 2010 (presented by student J. L. Dolan)
65. Invited Seminar, "Technical Challenges and Recent Advances in Nuclear Nonproliferation and Safeguards Applications," American Nuclear Society, Michigan Section, September 24, 2009

66. Invited Talk, "University of Michigan Curriculum in Nuclear Nonproliferation and Safeguards," LANL/TAMU NGS Human Capital Development Workshop, Los Alamos National Laboratory, Santa Fe, New Mexico, August 10, 2009
67. Invited Talk, "Fast Neutron Spectrum Unfolding for Nuclear Nonproliferation and Safeguards Applications," International Conference on Transport Theory, Torino, Italy, July 17, 2009
68. Invited Seminar, "Measurement and Analysis Systems for Nuclear Nonproliferation, Safeguards, and Homeland Security Applications," University of Michigan Colloquium, March 20, 2009
69. Invited Talk, "Recent Advances and Upcoming Challenges in Nuclear Nonproliferation, Safeguards, and the Prevention of Nuclear Terrorism," Workshop "A New Model for U.S.-Russian Nonproliferation and Antiterrorism Cooperation," Moscow Engineering Physics Institute, Moscow, Russia, December 15-16, 2008
70. Invited Seminar, "Women in Nuclear: Continuing the Heritage," Women in Nuclear – Swedish Branch – Annual Meeting Ringhals, Sweden, November 13-14, 2008
71. Invited Seminar, "The Discovery of Fission to Today's Nuclear Engineering Challenges," Women in Science and Engineering Residence Program, University of Michigan, November 4, 2008
72. Invited Seminar, "From the Discovery of Nuclear Fission to Today's Challenges in Nuclear Energy and Nonproliferation," Women in Engineering, IEEE Nuclear Science Symposium and Medical Imaging Conference, Dresden, Germany, October 19-25, 2008
73. Invited Talk, "Recent Developments in Fast Neutron Detection and Spectroscopy," Global Nuclear Energy Partnership: Safeguards Working Group, Washington, D.C., June 17, 2008
74. Invited Seminar, "Modeling and Experiments for Nuclear Nonproliferation Applications," Chalmers University of Technology, Gotenburg, Sweden, March 6, 2008
75. Invited Seminar, "Special Nuclear Material Detection and Characterization: Modeling Tools and Validation Experiments," SKI (Swedish Nuclear Regulatory Authority), Stockholm, Sweden, March 7, 2008
76. Invited Seminar, "New Detection Techniques for Special Nuclear Material: from Modeling and Simulations to Experiments and Validation," Lawrence Berkeley National Laboratory, April 20, 2007
77. Invited Seminar, "New Detection Techniques for Special Nuclear Material: from Modeling and Simulations to Experiments and Validation," Department of Chemical and Nuclear Engineering, University of New Mexico, April 12, 2007
78. Invited Seminar, "Neutron Slowing Down and Detector Response: Organic Scintillators," Department of Nuclear Engineering, The University of California, Berkeley, February 13, 2007
79. Invited Seminar, "Novel Active Interrogation Techniques for the Detection of Special Nuclear Material," Lawrence Berkeley National Laboratory, February 9, 2007
80. Invited Seminar, "Recent Developments in Monte Carlo Methods for Nuclear Nonproliferation and Homeland Security Applications", Department of Chemical and Nuclear Engineering, University of New Mexico, Albuquerque, December 4, 2006

81. Invited Seminar, "Active Interrogation by Photofission for Nuclear Nonproliferation and Homeland Security Applications," Lawrence Livermore National Laboratory, October 27, 2006
82. Invited Seminar, "Recent Developments in Monte Carlo Methods for Nuclear Nonproliferation and Homeland Security Applications", Department of Nuclear Engineering, The University of California, Berkeley, October 26, 2006
83. Invited Seminar, "Recent Developments in Monte Carlo Methods for Nuclear Nonproliferation and Homeland Security Applications," The Pennsylvania State University, State College, PA, October 5, 2006
84. Invited Seminar, "Monte Carlo Simulation of Correlation Measurements of Photon Interrogation of Fissile Material," Idaho Accelerator Center, Idaho State University, Pocatello, ID, July, 2006
85. Invited Talk, "Nuclear Materials Identification by Photon Interrogation," Monte Carlo 2005, September 12-15, 2005, Avignon, France
86. Invited Seminar, "Developments of Monte Carlo simulation capabilities", ORNL – All-Russia Scientific Research Institute of Experimental Physics (VNIIEF) - All-Russia Scientific Research Institute of Automatics (VNIIA) Workshop, June, 2005
87. Invited Seminar, "NMIS Measurements on Plutonium Oxide Samples at the EURATOM Laboratory JRC-Ispra, Italy," ORNL – All-Russia Scientific Research Institute of Experimental Physics (VNIIEF) - All-Russia Scientific Research Institute of Automatics (VNIIA) Workshop, June, 2005
88. Invited Seminar, "Monte Carlo Modeling for the Characterization of Nuclear Materials", International Meeting on Reactor Noise (IMORN) 29, May 17-19, 2004, Budapest, Hungary
89. Invited Seminar, "Simulation of Experiments Based on Photonuclear Interrogation," ORNL – All-Russia Scientific Research Institute of Experimental Physics (VNIIEF) - All-Russia Scientific Research Institute of Automatics (VNIIA) Workshop, June, 2005
90. Invited Seminar, "Characterization of Organic Scintillators for the Detection of Nuclear Materials," Joint Research Center, European Commission, Geel, Belgium, October 27, 2004
91. Invited Seminar, Presentation of the MCNP-PoliMi code at the ORNL – All-Russia Scientific Research Institute of Experimental Physics (VNIIEF) - All-Russia Scientific Research Institute of Automatics (VNIIA) Workshop, February, 2003
92. Invited Seminar, Presentation of the MCNP-PoliMi code at the Oak Ridge National Laboratory, Oak Ridge, Tennessee, July 2001

PUBLICATIONS

Journal Publications

1. T. H. Shin, A. Di Fulvio, S.D. Clarke, D.L. Chichester, S.A. Pozzi, "Prompt Fission Neutron Anisotropy in Low-Multiplying Subcritical Plutonium Metal Assemblies", Nuclear Instruments and Methods in Physics Research A, vol. 915, pp. 110-115, 2019.
2. C. Sivals, A. Prinke, S. Clarke, S. Pozzi, J. McIntyre, "Anticoincidence Analysis for Radioxenon Detection", JRNC SI: Methods and Applications of Radioanalytical Chemistry (MARC XI), vol. 318, Issue 1, pp. 561-567, 2018.

3. A. Di Fulvio, T. H. Shin, A. Basley, C. Swenson, C. Sosa, S. D. Clarke, J. Sanders, S. Watson, D. L. Chichester, and S. A. Pozzi, Fast-neutron Multiplicity Counter for Active Measurements of Uranium Oxide Certified Material, *Nuclear Instruments and Methods in Physics Research A* vol. 907, pp. 248-257, 2018.
4. C. Sivals, S. Clarke, E. Padovani, A. Prinke, J. McIntyre, S. A. Pozzi. "Validation of MCNPX-PoliMi code for simulations of radioxenon beta-gamma coincidence detection," *Nucl. Instr. Meth. A*, vol. 906, pp. 43-49, 2018.
5. C. S. Sosa, S. J. Thompson, D. L. Chichester, S. D. Clarke, A. D. Fulvio, S. A. Pozzi, Energy resolution experiments of conical organic scintillators and a comparison with Geant4 simulations, *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 898 pp. 77–84, 2018.
6. F. Cheng, A. Di Fulvio, D. Wentzloff, S. D. Clarke, S. A. Pozzi, H. S. Kim Artificial Neural Network Algorithms for Pulse Shape Discrimination and Recovery of Piled-up Pulses in Organic Scintillators, *Annals of Nuclear Energy*, vol. 120, pp. 410–421, 2018.
7. J. Arthur, R. Bahran, J. Hutchinson, A. Sood, M. RIsing, S. A. Pozzi, "Validating the performance of correlated fission multiplicity implementation in radiation transport codes with subcritical neutron multiplication benchmark experiments," *Annals of Nuclear Energy*, vol. 120, pp. 348-366, 2018.
8. J. Arthur, R. Bahran, J. Hutchinson, A. Sood, N. Thompson, S. Pozzi, "Development of a research reactor protocol for neutron multiplication measurements," *Progress in Nuclear Energy*, vol. 106, pp. 120-139, 2018.
9. M. J. Mar cath, R. C. Haight, R. Vogt, M. Devlin, P. Talou, I. Stetcu, J. Randrup, P. F. Schuster, S. D. Clarke, S. A. Pozzi, "Measured and simulated 252-Cf(sf) prompt neutron-photon competition," *Physical Review C* 97, 044622, 2018.
10. P. Talou, R. Vogt, J. Randrup, M. E. Rising, S. A. Pozzi, J. Verbeke, M. T. Andrews, S. D. Clarke, P. Jaffke, M. Jandel, T. Kawano, M. J. Mar cath, K. Meierbachtol, G. Rusev, A. Sood, I. Stetcu, and C. Walker, "Correlated Prompt Fission Data in Transport Simulations," *European Physical Journal A*, vol 54, article 9, 2018.
11. F. D. Becchetti, R. S. Raymond, R. O. Torres-Isea, A. Di Fulvio, S. D. Clarke, S. A. Pozzi, M. Febbraro, Recent Developments in Deuterated Scintillators for Neutron Measurements at Low-energy Accelerators, *Nuclear Instruments and Methods in Physics Research A*, vol. 874, pp. 72-78, 2017.
12. K. A. Beyer, A. Di Fulvio, L. Stolarczyk, W. Parol, N. Mojżeszek, R. Kopec, S. D. Clarke, and S. A. Pozzi. "Organic scintillator for real-time neutron dosimetry in radiation therapy" *Radiation Protection Dosimetry*, 2017.
13. S. D. Clarke, M. C. Hamel, M. M. Bourne, S. A. Pozzi, "Detectors for Active Interrogation Applications," *Physics Procedia*, vol. 90, pp. 266-270, 2017.
14. C. B. Sivals, J. I. McIntyre, T. W. Bowyer, M. B. Kalinowski, S. A. Pozzi, "A review of the developments of radioxenon detectors for nuclear explosion monitoring," *Journal of Radioanalytical and Nuclear Chemistry*, vol. 314, 2, pp. 829-841, 2017.
15. S. D. Clarke, M. C. Hamel, A. Di Fulvio, S. A. Pozzi, "Neutron and Gamma-ray Energy Reconstruction for Characterization of Special Nuclear Material," *Nuclear Engineering and Technology*, vol. 49, pp. 1354 - 1357, 2017.

16. T. H. Shin, M. Y. Hua, M. J. Marcath, D. L. Chichester, I. Pázsit, A. Di Fulvio, S. D. Clarke, S. A. Pozzi, "Neutron Multiplicity Counting Moments for Fissile Mass Estimation in Scatter-Based Neutron Detection Systems," *Nuclear Science & Engineering*, vol. 188, pgs. 246-269, 2017.
17. M. C. Hamel, J. K. Polack, A. Poitrasson-Rivière, S. D. Clarke, S. A. Pozzi, "Localization and spectral isolation of special nuclear material using stochastic image reconstruction," *Nuclear Instruments and Methods in Physics Research Section A*, vol. 841, pgs. 24-33, 2017.
18. A. Di Fulvio, F. D. Becchetti, R. S. Raymond, R. O. Torres-Isea, S. D. Clarke, S. A. Pozzi, "Characterization of Deuterated-xylene Scintillator as Neutron Spectrometer", *IEEE Transactions on Nuclear Science*, vol. 64, 7, pp. 1825 - 1832, 2017.
19. S. D. Clarke, B. M. Wieger, A. Enqvist, R. Vogt, J. Randrup, R. C. Haight, H. Y. Lee, B. A. Perdue, E. Kwan, C. Y. Wu, R. A. Henderson, and S. A. Pozzi, "Measurement and Simulation of Correlated Neutrons from Photofission of ^{235}U ," *Phys. Rev. C* 95, 064612, 2017.
20. M. C. Hamel, J. K. Polack, M. L. Ruch, M. J. Marcath, S. D. Clarke, S. A. Pozzi, "Active neutron and gamma-ray imaging of highly enriched uranium for treaty verification," *Nature Scientific Reports*, 7: 7997, DOI:10.1038/s41598-017-08253-x, 2017.
21. A. Di Fulvio, T. H. Shin, T. Jordan, C. Sosa, M. L. Ruch, S. D. Clarke, D. Chichester, S. A. Pozzi, "Fast Neutron Multiplicity Counter for the Assay of Plutonium Metal Plates", *Nuclear Instruments and Methods in Physics Research Section A*, vol. 855, pp. 92-101, 2017.
22. M. Monterial, P. Marleau, M. Paff, S. Clarke, S. Pozzi, "Multiplication and Presence of Shielding Material from Time-Correlated Pulse-Height Measurements of Subcritical Plutonium Assemblies", *Nuclear Instruments and Methods in Physics Research Section A*, vol. 851, pp. 50-56, 2017.
23. M. Monterial, P. Marleau, S. A. Pozzi, "Single-View 3D Reconstruction of Correlated Gamma-Neutron Sources," in *IEEE Transactions on Nuclear Science*, vol. 64, n. 7, pp.1840, 2017.
24. M. G. Paff, A. Di Fulvio, S. D. Clarke, and S. A. Pozzi, "Radionuclide identification algorithm for organic scintillator-based radiation portal monitor," *Nuclear Instruments and Methods in Physics Research Section A*, vol. 849C, pp. 41-48, 2017.
25. M. A. Norsworthy, A. Poitrasson-Rivière, M. L. Ruch, S. D. Clarke, S. A. Pozzi, "Evaluation of Neutron Light Output Response Functions in EJ-309 Organic Scintillators," *Nuclear Instruments and Methods in Physics Research Section A*, vol. 842, pp. 20-27, 2017.
26. M. Bourne, S. Clarke, M. Paff, A. Di Fulvio, M. Norsworthy, S. Pozzi, "Digital Pile-up Rejection of Plutonium Experiments with Solution-Grown Stilbene", *Nuclear Instruments and Methods in Physics Research Section A*, vol. 842, pp. 1-6, 2017.
27. S. A. Pozzi, M. C. Hamel, K. Polack, M. J. Marcath, T. H. Shin, A. Di Fulvio, and S. D. Clarke. "Detection for Nuclear Nonproliferation," Proc. Int. Symp. on Radiation Detectors and Their Uses (ISR2016), *JPS Conf. Proc.* 11, 050001, 2016.
28. G. Blanchard, M. Flaska, G. Handy, S. A. Pozzi, and C. Scott, "Classification with Asymmetric Label Noise: Consistency and Maximal Denoising," *Electronic Journal of Statistics*, ISSN: 1935-7524, 2016.

29. M. J. Marcat, T. H. Shin, S. D. Clarke, P. Peerani, S. A. Pozzi, "Neutron Angular Distribution in Plutonium-240 Spontaneous Fission", *Nuclear Instruments and Methods in Physics Research Section A*, vol. 830, pp. 163-169, 2016.
30. C. Sosa, M. Flaska, S. A. Pozzi, "Comparison of analog and digital pulse-shape-discrimination systems", *Nuclear Instruments and Methods in Physics Research Section A*, vol. 826, pp. 72-79, 2016.
31. M. G. Paff, S. D. Clarke, S. A. Pozzi, "Organic liquid scintillation detector shape and volume impact on radiation portal monitors," *Nuclear Instruments and Methods in Physics Research Section A*, vol. 825, pp. 31-39, 2016.
32. F.D. Becchetti, R.S. Raymond, and R.O.Torres-Isea, A. Di Fulvio, S.D. Clarke, and S.A. Pozzi, M. Febbraro "Deuterated-xylene (xylene-d10; EJ301D): a new, improved deuterated liquid scintillator for neutron energy measurements without time-of-flight", *Nuclear Instruments & Methods in Physics Research Section A*, vol. 810, pp. 112-120, 2016.
33. S. Avdic, P. Marinkovic, S. A. Pozzi, M. Flaska, Z. Dedić, and A. Osmanovic, "Study of the Filter Method for Neutron Pulse-Height Distributions Measured with Organic Scintillators," *Radiation Measurements*, vol. 86, pp. 32-38, 2016.
34. M. C. Hamel, J. K. Polack, A. Poitrasson-Rivière, M. Flaska, S.D. Clarke, S.A. Pozzi, A. Tomanin, P. Peerani, "Stochastic Image Reconstruction for a Dual-particle Imaging System," *Nuclear Instruments & Methods in Physics Research Section A*, vol. 810, pp. 120-131, 2016.
35. Chen, G. Golovin, D. Haden, S. Banerjee, P. Zhang, C. Liu, J. Zhang, B. Zhao, D. Umstadter, C. Miller, S. Clarke, S. A. Pozzi, "Shielded radiography with a laser driven MeV energy x-ray source," *Nuclear Instruments & Methods in Physics Research Section B*, vol. 366, pp. 217-223, 2016.
36. M. M. Bourne, S. D. Clarke, N. Adamowicz, S. A. Pozzi, N. Zaitseva, and L. Carman, "Neutron Detection in a High-Gamma Field Using Solution-Grown Stilbene," *Nuclear Instruments & Methods in Physics Research Section A*, vol. 806, pp. 348-355, 2016.
37. A. Di Fulvio, T. H. Shin, M. C. Hamel, S. A. Pozzi, "Digital pulse processing for NaI(Tl) detectors," *Nuclear Instruments & Methods in Physics Research Section A*, vol. 806, pp. 169-174, 2015.
38. M. Ruch, M. Flaska, and S. A. Pozzi, "Pulse shape discrimination performance of stilbene coupled to low-noise silicon photomultiplier tubes," *Nuclear Instruments & Methods in Physics Research Section A*, vol. 793, pp. 1-5, 2015.
39. M. G. Paff, M. L. Ruch, A. Poitrasson-Riviere, A. Sagadevan, S. D. Clarke, S. A. Pozzi, "Organic Liquid Scintillation Detectors For On-The-Fly Neutron/Gamma Alarming And Radionuclide Identification In A Pedestrian Radiation Portal Monitor," *Nuclear Instruments and Methods in Physics Research Section A*, vol. 789, pp. 16-27, 2015.
40. S. Banerjee, S. Chen, N. Powers, D. Haden, C. Liu, G. Golovin, J. Zhang, B. Zhao, S. Clarke, S. Pozzi, J. Silano, H. Karwowski, D. Umstadter, "Compact Source of Narrowband and Tunable X-rays for Radiography," *Nuclear Instruments and Methods in Physics Research Section B*, vol. 350, pp. 106-111, 2015.
41. A. Poitrasson-Rivière, J. K. Polack, M. C. Hamel, D. D. Klemm, K. Ito, A. T. McSpaden, M. Flaska, S. D. Clarke, S. A. Pozzi, A. Tomanin, and P. Peerani, "Angular-Resolution and

- Material-Characterization Measurements for a Dual-Particle Imaging System with Mixed-Oxide Fuel," *Nuclear Instruments & Methods in Physics Research Section A*, vol. 797, pp. 278-284, 2015.
42. A. Poitrasson-Rivière, B. A. Maestas, M. C. Hamel, S. D. Clarke, M. Flaska, S. A. Pozzi, G. Pausch, C. M. Herbach, A. Gueorguiev, M. F. Ohmes, J. Stein, "Monte Carlo Investigation of a High-Efficiency, Two-Plane Compton Camera for Long-Range Localization of Radioactive Materials," *Progress in Nuclear Energy*, vol. 81, pp. 127-133, 2015.
 43. M. Monterial, P. Marleau, S. Clarke, S.A. Pozzi, "Application of Bayes' theorem for pulse shape discrimination," *Nuclear Instruments & Methods in Physics Research Section A*, vol. 795, pp. 318-324, 2015.
 44. M. J. Marcath, S.D. Clarke, B.M. Wieger, E. Padovani, E.W. Larsen, S.A. Pozzi, "An Implicit Correlation Method for Cross-Correlation Sampling, with MCNPX-PoliMi Validation," *Nucl. Sci. Eng.*, vol. 181, No. 1, 2015.
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Patents pending (inventors, title, date submitted)

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