

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Nuclear Engineering and Radiological Sciences

**Approved by the
Regents
May 21, 2015**

Sara A. Pozzi, associate professor of nuclear engineering and radiological sciences, with tenure, Department of Nuclear Engineering and Radiological Sciences, College of Engineering, is recommended for promotion to professor of nuclear engineering and radiological sciences, with tenure, Department of Nuclear Engineering and Radiological Sciences, College of Engineering.

Academic Degrees:

Ph.D. 2001 Polytechnic of Milan, Science and Technology of Nuclear Plants, Milano, Italy
M.S. 1997 Polytechnic of Milan, Nuclear Engineering, Milano, Italy

Professional Record:

2014 - present Director, Consortium for Verification Technology, University of Michigan
2010 - present Associate Professor (with tenure), Department of Nuclear Engineering and Radiological Sciences, University of Michigan
2007 - present Founder/Leader of the Detection for Nuclear Nonproliferation Group, University of Michigan
2007 - 2010 Associate Professor (without tenure), Department of Nuclear Engineering and Radiological Sciences, University of Michigan
2007 Senior Research Staff, Oak Ridge National Laboratory, Oak Ridge, TN
2006 - 2008 Adjunct Assistant Professor, University of Tennessee
2004 - 2006 Research Staff, Oak Ridge National Laboratory, Oak Ridge, TN
2002 - 2004 Post-doctoral Research Associate, Oak Ridge National Laboratory, Oak Ridge, TN
2001 - 2002 Post-doctoral Researcher, Polytechnic of Milan, Milano, Italy
1997 - 2001 Research Doctorate, Polytechnic of Milan, Milano, Italy
2000 Visiting Scientist, Oak Ridge National Laboratory, Oak Ridge, TN
2000 Research Associate, University of Tennessee
1999 Visiting Scientist, Oak Ridge National Laboratory, Oak Ridge, TN

Summary of Evaluation:

Teaching: Professor Pozzi has been extremely active and successful in teaching. She developed two new courses: 1) Detection Techniques for Nuclear Nonproliferation, NERS 535, and 2) Nuclear Safeguards, NERS 590. These courses were crucial in the development of a new departmental track for nuclear security and nonproliferation. Her student evaluation scores have been strong with an average of 4.0 for Q1 (Excellent Course) and 4.29 for Q2 (Excellent Teacher). Professor Pozzi has been an outstanding mentor of graduate students, supervising a large group of 14 students. She has graduated seven Ph.D. students, two as chair and five as co-chair, at the University of Michigan and elsewhere. Her M.S. supervision includes 15 students. Professor Pozzi's mentoring abilities are shown by over a dozen best-paper awards won by her graduate students. Her students appreciate her teaching and mentoring."

Research: Professor Pozzi has developed an outstanding international reputation from her research on nuclear measurements and non-proliferation. Her individual research contributions have been both fundamental (neutron multiplicity) and applied (liquid scintillators). She has made major contributions to both computational and experimental aspects of nuclear nonproliferation measurements. Professor Pozzi has assembled a research group of some 30 students and researchers that have performed experiments at facilities around the world and gained international recognition for their research. The publication record

of Professor Pozzi is stellar, with 79 refereed journal publications, over 200 conference proceedings and 27 government reports. She has been extremely successful in funded research, having developed major research programs at the University of Michigan funded by \$34M in federal research funding. This includes her leadership of the new NNSA-sponsored \$25M Consortium for Verification Technology (CVT) that involves 13 universities and national laboratories. Professor Pozzi's leadership of this consortium has been remarkable, assembling the nation's experts in all fields of nuclear nonproliferation, including policy, radiation detection, seismic analysis, infrasound and big-data analysis. The CVT consortium is already making a major impact on the field of nuclear nonproliferation under Professor Pozzi's leadership. Her letters of recommendation from the world's top experts place her in the first-rank of international scholars in the field of nuclear measurements for nonproliferation.

Recent and Significant Publications:

- E. C. Miller, J. K. Mattingly, S. D. Clarke, S. A. Pozzi, C. J. Solomon, B. Dennis, and A. Meldrum, "Computational Evaluation of Neutron Multiplicity Measurements of Polyethylene-Reflected Plutonium Metal," *Nuclear Science and Engineering* 176(2), pp. 167-185, 2014.
- S. A. Pozzi, M. M. Bourne, and S. D. Clarke, "Pulse Shape Discrimination in the Plastic Scintillator EJ-299-33," *Nuclear Instruments and Methods in Physics Section A*, 723, pp. 19-23, 2013.
- S. A. Pozzi, S. D. Clarke, W. Walsh, E. C. Miller, J. L. Dolan, M. Flaska, B. M. Wiegner, A. Enqvist, E. Padovani, J. K. Mattingly, D. Chichester, and P. Peerani, "MCNPX-PoliMi for Nuclear Nonproliferation Applications," *Nuclear Instruments and Methods in Physics Section A*, vol. 694, pp. 119-125, 2012.
- A. Enqvist, B. M. Wiegner, L. Huang, M. Flaska, S. A. Pozzi, R. C. Haight, H. Young Lee and C. Yen Wu, "Neutron-induced U-235 Fission Spectrum Measurements using Liquid Organic Scintillation Detectors," *Physical Review C*, 86, 064605 2012.
- S. A. Pozzi, Y. Xu, T. Zak, S. D. Clarke, M. Bourne, M. Flaska, T. J. Downar, P. Peerani, and V. Protopopescu, "Fast Neutron Spectrum Unfolding for Nuclear Nonproliferation and Safeguards Applications," *Il Nuovo Cimento C*, Vol. 33 C, Issue 1, p. 207, 2010.

Service: Professor Pozzi has been a strong contributor to service in the department, college and university. She has served as co-graduate chair, in charge of the Ph.D. program. Under Professor Pozzi's direction, the Ph.D. student recruiting has sustained a high quality of graduate students and enhanced the diversity through the energetic recruiting of women and underrepresented minorities. Professor Pozzi led the creation and development of the first Institute of Nuclear Materials Management (INMM) Student Chapter, with over 30 student members. At the national level, Professor Pozzi has chaired the Awards Committee for the IEEE Radiation Instrumentation Steering Committee since 2007.

External Reviewers:

Reviewer A: "This volume of productivity coupled with high quality of the publications as evidenced by the repute of the venues they appeared in attest to the high caliber of her intellectual pursuits and superior mentoring skills, both of which are essential criteria for meeting the professorial standards...this project is a career changer as it propels Dr. Pozzi to the forefront of a new generation of US, perhaps even worldwide, academics who will lead the charge of nuclear security."

Reviewer B: "Sara is internationally known and her work is known to be of the highest standard. ...here at the ... Sara is highly regarded [sic]. In the ... community also she is established as a pillar of the technical safeguards group – a person whose opinion is sought and valued."

Reviewer C: "...S. Pozzi is well suited for the position of Professor with tenure, due to the impressive teaching record, project management experience and broad spectrum of research... The candidate is certainly visible at the national (US) and international level...The scientific contribution of the candidate can be ranked at high level in the field."

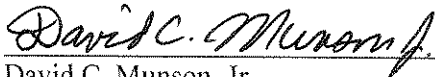
Reviewer D: “Based on my stature in the field as a leading expert, it is my professional opinion that Associate Prof. Dr. S. Pozzi has achieved a high level of international renown in Nuclear Safety and Nuclear Non-proliferation...Her insight, comprehensive understanding of the subject, scientific acumen, and research capabilities place Associate Prof. Pozzi at the top of her field...Concerning impact I see her also among the best 10%...So in conclusion I rate the candidate among the best 10% concerning her visibility at national and international level.”

Reviewer E: “Pozzi’s output rate since 2008 is impressive... There is no doubt that Dr Pozzi has a strong national standing in the US and is a regular attendee at tests etc. at the JRC Ispra, IEEE SORMA, NSS-MIC and so forth...In terms of her contemporaries I am confident that she is ahead of them in terms of grant income and service activities (most definitely in terms of PhD supervision)...”

Reviewer F: “The scientific work done by Prof. Pozzi’s research group in these few years at UM has positioned them [sic] internationally as one of the world’s leading academic research groups in the area of nuclear nonproliferation and safeguards...I can enthusiastically support her application for professor position with tenure at the Michigan University...Prof. Pozzi belong already to leading scientists in the world in the field of nonproliferation and neutron detection....She is a brilliant scientist with a large number of successful achievements in the basic research, applied one, as well as, in the teaching and education. ...she belongs to the most capable scientist of [her] generation.”

Reviewer G: “She is one of rare researchers who excels in both experimental and computational aspects of nuclear non-proliferation in safeguards...Her stellar research accomplishments allow me to place Sara among the best in the world in her field...Although she is already a stellar faculty, I have no doubt that even greater academic career is ahead of her. For all these reasons, I recommend Sara Pozzi for a promotion to Professor with tenure in your Department strongly, wholeheartedly and without any reservations.”

Summary of Recommendation: Professor Pozzi has established an outstanding international reputation as a teacher, researcher and leader in the field of nuclear nonproliferation measurements. Her research and the major programs that she leads have made a major impact and will continue to do so by their technical excellence and societal importance. It is with the support of the College of Engineering Executive Committee that I recommend Sara A. Pozzi for promotion to professor of nuclear engineering and radiological sciences, with tenure, Department of Nuclear Engineering and Radiological Sciences.



David C. Munson, Jr.
Robert J. Vlasic Dean of Engineering
College of Engineering

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