

Andrea L. Richard

EXPERIMENTALIST · LOW ENERGY NUCLEAR PHYSICS · APPLIED NUCLEAR PHYSICS

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Employment

National Superconducting Cyclotron Laboratory

East Lansing, MI USA

NSSC POSTDOCTORAL FELLOW

March 2018 - PRESENT

- Constraining neutron-capture cross sections, nuclear level densities, and γ -ray strength functions of rare isotopes using β -decay spectroscopy
- Project #1: Constraining neutron-capture cross sections of $^{102,103}\text{Mo}$ using the β -Oslo method
- Project #2: Post-trap decay spectroscopy of isomeric states in ^{70}Cu
- Project #3: Set-up and Commissioning of SuNTAN detector at Argonne National Laboratory
- Postdoc Advisor: Dr. Sean Liddick

Education

Ohio University, Department of Physics and Astronomy

Athens, Ohio USA

PH.D IN NUCLEAR PHYSICS

January 2014 - May 2018

- Dissertation: *Spectroscopy of the $A = 33$ Isobars in the Island of Inversion*
- Advisor: Dr. Heather L. Crawford (OHIO, LBNL)
- GPA: 3.803

Ohio University, Department of Physics and Astronomy

Athens, Ohio USA

M.S. IN NUCLEAR PHYSICS

August 2011 - May 2014

- Thesis: *Measurement of the Breakup Cross Section of the $D+D$ Reaction at 6.94 MeV for the Active Interrogation of Hidden Fissile Materials*
- Advisors: Dr. Carl R. Brune & Dr. David C. Ingram

Muskingum University, Department of Physics and Engineering

New Concord, Ohio USA

B.S. IN PHYSICS AND MATHEMATICS

August 2007 - June 2011

- Minors in Engineering and English
- Magna Cum Laude

Skills

Programming Languages C/C++, Fortran, JAVA

Analysis Software ROOT, Matlab, Mathematica, RUMP/GENPLOT, SpecTcl, TALYS, RAINIER

Detector Experience NE-213, lithium-glass, ^3He proportional counters, silicon (DSSD, unsegmented), total absorption spectrometer (SuN), HPGe (unsegmented, GRETINA, SeGA)

Experimental Techniques neutron time-of-flight spectroscopy, charged particle detection, γ -ray spectroscopy, β -decay studies, Rutherford Backscattering Spectroscopy (RBS), Particle Induced X-Ray Emission (PIXE)

Languages English, Spanish (intermediate), American Sign Language (novice)

Research Experience

Research Associate

2018 - Present

NATIONAL SUPERCONDUCTING CYCLOTRON LABORATORY, MI, USA

- Constraining neutron-capture cross sections using the β -Oslo Method via measurement of the nuclear level density and γ -strength functions
- NSCL experiment e12001: Constraining neutron-capture of fission fragments and i-process nuclei $^{102}\text{Mo}(n,\gamma)^{103}\text{Mo}$ and $^{103}\text{Mo}(n,\gamma)^{104}\text{Mo}$
- NSCL experiment e17014: post-trap decay spectroscopy of ^{70}Cu to test fundamental assumptions in Brink-Axel hypothesis
- Work funded by the NSSC

Research Assistant

2014 - 2018

OHIO UNIVERSITY, OH, USA

- Work done on ^{33}Mg and neighboring isotopes in the Island of Inversion
- NSCL Experiment e11029: GRETINA + S800 used to study rotational properties of ^{33}Mg
- NSCL Experiment e14063: GeDSSD + SeGA used to study the β -decay of ^{33}Na and ^{33}Mg
- Analysis done in C++ and Root
- Work was partly funded by the DOE SCGSR award (6/1/16 - 9/1/16) at LBNL

Research Assistant

2013 - 2018

OHIO UNIVERSITY, OH, USA

- Utilized ion beam analysis (IBA) techniques to determine thin film composition and thickness
- Work done at the Edwards Accelerator Laboratory at OHIO
- Techniques used: Rutherford Backscattering Spectrometry (RBS), Particle Induced X-Ray Emission (PIXE)
- Involvement in integrating the PIXE setup into the RBS chamber

Research Assistant

2012 - 2013

OHIO UNIVERSITY, OH, USA

- Work done on the D(d,n) reactions as part of M.S. degree
- Setup detectors and electronics, and operated the 4.5 MV tandem accelerator at OHIO
- Analysis done using Fortran and results included angular distribution of the cross section and integrated cross sections

Teaching Experience

Introductory Physics for Engineers

2019

MICHIGAN STATE UNIVERSITY, MI, USA

- Taught engineering students about circular motion and forces for one week with Prof. Artemis Spyrou

Physicists Inspiring the Next Generation (PING) Lecturer

2019

NATIONAL SUPERCONDUCTING CYCLOTRON LABORATORY, MI, USA

- Taught high school students a two-part lecture on nuclear astrophysics

NS₃ Lecturer

2018 - 2019

NATIONAL SUPERCONDUCTING CYCLOTRON LABORATORY, MI, USA

- Gave a lecture on α , β , and γ -decay for the Nuclear Science Summer School (NS3)

SCALE-UP Teaching Assistant

2013 - 2014

OHIO UNIVERSITY, OH, USA

- Participated in the SCALE-UP (Flipped Classroom) teaching style for calculus-based introductory physics
- Attended lectures and recitations to help students with group activities such as whiteboard problems, miniature labs, and quizzes

Teaching Assistant

2011 - 2012

OHIO UNIVERSITY, OH, USA

- Taught the laboratory portion of calculus-based and algebra-based introductory physics courses
- Assisted students in the LON-CAPA help sessions for calculus-based and algebra-based introductory physics courses
- Graded quizzes and homework for introductory astrophysics classes

Honors & Awards

Present	NNSA NSSC Postdoctoral Fellowship , NNSA Nuclear Science and Security Consortium	NSCL/MSU
2016	DOE Office of Science Graduate Student Research (SCGSR) award , U.S. Department of Energy (DOE) Office of Science - completed at Lawrence Berkeley National Laboratory	LBNL
2017	First Place (Physics Group) - Poster Presentation , Student Research and Creative Activity Expo	Ohio University
2015	First Place (Physics Group) - Poster Presentation , Student Research and Creative Activity Expo	Ohio University
2015	Travel Grant , Division of Nuclear Physics, APS April Meeting	Baltimore, MD
2014	Special Teaching Assistant Award , Award for participation in the newly implemented SCALE-UP teaching style	Ohio University
2013	Second Place (Physics Group) - Poster Presentation , Student Research and Creative Activity Expo	Ohio University
2013	Great Lakes National Scholar , Scholarship from Great Lakes for STEM Students	
2012	Outstanding Teaching Assistant , Department of Physics and Astronomy	Ohio University

Presentations

Invited Talks

- "Neutron capture cross section measurements on short-lived isotopes", Stewardship Science Academic Programs (SSAP) Symposium, February 26-27, 2020
- "Building a Nuclear Astrophysicist One Reaction at a Time", National Society of Black Physicists Conference, November 14-17, 2019
- "Study of Rare Isotopes at the National Superconducting Cyclotron Laboratory", Nuclear Engineering and Radiological Sciences Lunch Seminar, University of Michigan, October 24, 2019
- "Constraining Neutron-Capture Cross Sections for Basic Research and Applications", NSSC University Program Review, June 4, 2019
- "Constraining Neutron-Capture and Beta-Decay Strengths for Basic Research and Applications", NSSC Fall Advisory Board Meeting, October 1, 2018
- " ^{33}Mg from a Simple Perspective", Special Seminar, Indiana University-Bloomington, November 27, 2017
- "Strongly Coupled Rotational Band in ^{33}Mg ", Special Seminar, NSCL, November 7, 2017
- " ^{33}Mg from a Simple Perspective", Nuclear Data Seminar, LANL, October 30, 2017
- " ^{33}Mg from a Simple Perspective", INPP Nuclear Seminar, Ohio University, February 21, 2017
- "Low Energy Nuclear Science at Ohio University", LBNL Nuclear Physics Forum, June 30, 2015

Contributed Talks

- "Constraining i-process nucleosynthesis via the neutron-capture cross sections of $^{102,103}\text{Mo}$ ", 2019 Fall Meeting of the APS Division of Nuclear Physics, October 14-17, 2019, Crystal City, VA, USA
- "Neutron-Capture Cross Sections of i-process Nuclei $^{102,103}\text{Mo}$ ", Gordon Research Seminar, June 15-16, 2019, New London, NH, USA
- "Neutron-Capture Cross Sections of i-process Nuclei $^{102,103}\text{Mo}$ ", 7th Workshop on Nuclear Level Density and Gamma Strength, May 27-31, 2019, Oslo, Norway
- "Experimentally Constrained Neutron-Capture Cross Sections of i-process Nuclei $^{102,103}\text{Mo}$ ", i-process Workshop, April 29 - May 1, 2019, TRIUMF, Vancouver BC, Canada
- "Nuclear Level Density and Gamma Strength Functions for i-process nuclei, $^{103,104}\text{Mo}$ ", 5th Joint Meeting of the APS Division of Nuclear Physics and the Physical Society of Japan, October 23-27, 2018, Waikoloa, Hawaii
- " ^{33}Mg from a Simple Perspective", 2017 Fall Meeting of the APS Division of Nuclear Physics, October 25-28, 2017, Pittsburgh, PA, USA
- " β -Delayed Gamma Spectroscopy of Neutron-Rich Mg Isotopes in and around the Island of Inversion", 2016 Fall Meeting of the APS Division of Nuclear Physics, October 13-16, 2016, Vancouver, BC, Canada.
- "The Breakup Cross Section of the D+D Reaction at 6.94 MeV", APS April Meeting 2015, April 11-14, 2015, Baltimore, MD, USA.

Posters

- "Constraining Neutron-Capture Cross Sections for Basic Research and Applications", NSSC Fall Advisory Board Meeting, October 7-9, 2019, Livermore, CA, USA
- "Neutron-Capture Cross Sections of i-process Nuclei $^{102,103}\text{Mo}$ ", Gordon Research Conference, June 16-21, 2019, New London, NH, USA
- "Rotational Band Structures in the N=20 Island of Inversion", Nuclear Structure 2018, August 5-10, 2018, East Lansing, MI, USA
- "Strongly Coupled Rotational Band in ^{33}Mg ", Frontiers in Nuclear Astrophysics Conference and Junior Workshop, May 21-25, 2018, South Bend, IN, USA.
- "The Breakup Cross Section of the D+D Reaction at 6.94 MeV", 2017 Stewardship Science Academic Programs (SSAP) Symposium, April 12-13, 2017, Naperville, IL, USA.
- "Spectroscopy of Neutron-Rich Mg Isotopes in and around the Island of Inversion", Ohio University Student Research and Creative Activity Expo, April 6, 2017
- "Spectroscopy of Neutron-rich Mg Isotopes in and around the Island of Inversion", Nuclear Structure 2016, July 24-29, 2016, Knoxville, Tennessee, USA
- "Spectroscopy of Neutron-Rich Mg Isotopes in and around the Island of Inversion", Ohio University Student Research and Creative Activity Expo, April 2016
- "The Breakup Cross Section of the D+D Reaction at 6.94 MeV", 2016 Stewardship Science Academic Programs (SSAP) Symposium, February 17-18, 2016, Bethesda, MD, USA.
- "The Breakup Cross Section of the D+D Reaction at 6.94 MeV", 21st International Conference on Few-Body Problems in Physics, May 18-22, 2015, Chicago, IL, USA.
- "Measurement of the D+D Breakup Cross Section for the Active Interrogation of Hidden Fissile Materials", Ohio University Student Research and Creative Activity Expo, April 2015
- "Measurement of the D+D Breakup Cross Section for the Active Interrogation of Hidden Fissile Material", Ohio University Student Research and Creative Activity Expo, April 2014
- "Measurement and Analysis of the Breakup Cross Section of the D(d,n) Reaction at 7 MeV", Ohio University Student Research and Creative Activity Expo, April 2013

Publications

1. " β -decay of $T_z = 11/2^+$ isotopes ^{37}Al and ^{39}Si : Understanding Gamow Teller strength distributions in neutron-rich nuclei", B. Abromeit, Vandana Tripathi, H. L. Crawford, S. N. Liddick, S. Yoshida, Y. Utsuno, P. C. Bender, B. P. Crider, R. Dungan, P. Fallon, K. Kravvaris, N. Larson, R. S. Lubna, T. Otsuka, C. J. Prokop, A. L. Richard, N. Shimizu, S. L. Tabor, and A. Volya, **Physical Review C**, *100*, 014323 (2019).
2. "Investigation of Neutron Cross Section for Iron in the ENDF Library with Pulsed Sphere Measurements", S. Dhakal, C. R. Brune, T. N. Massey, S. M. Grimes, A. V. Voinov, S. Akhtar, A. P. D. Ramirez, and A. L. Richard, **Nuclear Science and Engineering**, *193*, 1033 (2019).
3. "Level densities of $^{74,76}\text{Ge}$ from compound nuclear reactions", A. V. Voinov, T. Renström, D. L. Bleuel, S. M. Grimes, M. Guttormsen, A. C. Larsen, S. N. Liddick, G. Perdikakis, A. Spyrou, S. Akhtar, N. Alanazi, K. Brandenburg, C. R. Brune, T. W. Danley, S. Dhakal, P. Gastis, R. Giri, T. N. Massey, Z. Meisel, S. Nikas, S. N. Paneru, C. E. Parker, and A. L. Richard, **Physical Review C**, *99*, 054609 (2019).
4. "Dislocation structures, interfacing, and magnetism in the $\text{L1}_0\text{-MnGa}$ on $\eta\text{-Mn}_3\text{N}_2$ bilayer", J. P. Corbett, J. Guerrero-Sanchez, J. C. Gallagher, A.-O. Mandru, A. L. Richard, D. C. Ingram, F. Yang, N. Takeuchi, and A. R. Smith, **Journal of Vacuum Science & Technology A**, *37*, 031102 (2019).
5. "Neutron spectroscopy and spectral unfolding with ^4He fast neutron scintillators", Y. Liang, T. Zhu, C. E. Parker, A. L. Richard, T. N. Massey, R. Chandra, H. Ray, K. A. Jordan, J. Baciak, and A. Enqvist, **Nuclear Instruments and Methods A**, *922*, 1 (2019).
6. "The nitrogen concentration effect on Ce doped SiO_xN_y emission: towards optimized Ce^{3+} for DEL applications", F. Ehré, C. Labbé, C. Dufour, W. M. Jadwisieniczak, J. Weimmerskirch-Aubatin, X. Portier, J.-L. Doualan, J. Cardin, A. L. Richard, D. C. Ingram, C. Labrugère, and F. Gourbilleau, **Nanoscale**, *10*, 3823 (2018).
7. "Spectroscopic factors in the $N = 20$ island of inversion: The Nilsson strong-coupling limit", A. O. Macchiavelli, H. L. Crawford, C. M. Campbell, R. M. Clark, M. Cromaz, P. Fallon, M. D. Jones, I. Y. Lee, A. L. Richard, and M. Salathe, **Physical Review C**, *96*, 054302 (2017).
8. "Strongly Coupled Rotational Band in ^{33}Mg "
A. L. Richard, H. L. Crawford, P. Fallon, A. O. Macchiavelli, V. M. Bader, D. Bazin, M. Bowry, C. M. Campbell, M. P. Carpenter, R. M. Clark, M. Cromaz, A. Gade, E. Ideguchi, H. Iwasaki, M. D. Jones, C. Langer, I. Y. Lee, C. Loelius, E. Lunderberg, C. Morse, J. Rissanen, M. Salathe, D. Smalley, S. R. Stroberg, D. Weisshaar, K. Whitmore, A. Wiens, S. J. Williams, K. Wimmer, and T. Yamamoto, **Physical Review C Rapid Communication**, *96*, 011303(R) (2017).
9. "Surface structures of $\text{L1}_0\text{-MnGa}$ (001) by scanning tunneling microscopy and first-principles theory", J.P. Corbett, J. Guerrero-Sanchez, A.L. Richard, D.C. Ingram, N. Takeuchi, and A.R. Smith, **Applied Surface Science** *422*, 985 (2017).
10. "Structural and magnetic phase transitions in chromium nitride thin films grown by rf nitrogen plasma molecular beam epitaxy", Khan Alam, Steven M. Disseler, William D. Ratcliff, Julie A. Borchers, Rodrigo Ponce-Pérez, Gregorio H. Cocolletzi, Noboru Takeuchi, Andrew Foley, Andrea Richard, David C. Ingram, and Arthur R. Smith, **Physical Review B**, *96*, 104433 (2017).
11. " β -decay of $^{38,40}\text{Si}$ ($T_z = +5, +6$) to low-lying core excited states in odd-odd $^{38,40}\text{P}$ isotopes"
Vandana Tripathi, R. S. Lubna, B. Abromeit, H. L. Crawford, S. N. Liddick, Y. Utsuno, P. C. Bender, B. P. Crider, R. Dungan, P. Fallon, K. Kravvaris, N. Larson, A. O. Macchiavelli, T. Otsuka, C. J. Prokop, A. L. Richard, N. Shimizu, S. L. Tabor, A. Volya, and S. Yoshida, **Physical Review C** *95*, 024308 (2017).
12. "Contribution From Ising Domains Overlapping Out-of-Plane to Perpendicular Magnetic Anisotropy in Mn_4N Thin Films on $\text{MgO}(001)$ "
A. Foley, J. Corbett, K. Alam, A.L. Richard, D.C. Ingram, A. R. Smith, L. Zhao, J.C. Gallagher, F. Yang, **Journal of Magnetism and Magnetic Materials** *439*, 236 (2017).
13. "Direct Evidence of Octupole Deformation in Neutron-Rich ^{144}Ba "
B. Bucher, S. Zhu, C. Y. Wu, R. V. F. Janssens, D. Cline, A. B. Hayes, M. Albers, A. D. Ayangeakaa, P. A. Butler, C. M. Campbell, M. P. Carpenter, C. J. Chiara, J. A. Clark, H. L. Crawford, M. Cromaz, H. M. David, C. Dickerson, E. T. Gregor, J. Harker, C. R. Hoffman, B. P. Kay, F. G. Kondev, A. Korichi, T. Lauritsen, A. O. Macchiavelli, R. C. Pardo, A. Richard, M. A. Riley, G. Savard, M. Scheck, D. Seweryniak, M. K. Smith, R. Vondrasek, and A. Wiens, **Physical Review Letters** *116*, 112503 (2016).
14. "Rotational Band Structure in ^{32}Mg "
H. L. Crawford, P. Fallon, A. O. Macchiavelli, V. M. Bader, D. Bazin, M. Bowry, C. M. Campbell, M. P. Carpenter, R. M. Clark, M. Cromaz, A. Gade, E. Ideguchi, H. Iwasaki, C. Langer, I. Y. Lee, C. Loelius, E. Lunderberg, C. Morse, A. L. Richard, J. Rissanen, D. Smalley, S. R. Stroberg, D. Weisshaar, K. Whitmore, A. Wiens, S. J. Williams, K. Wimmer, and T. Yamamoto, **Physical Review C** *93*, 031303(R) (2016).
15. "Shape coexistence and the role of axial asymmetry in ^{72}Ge "
A.D. Ayangeakaa, R.V.F. Janssens, C.Y. Wu, J.M. Allmond, J.L. Wood, S. Zhu, M. Albers, S. Almaraz-Calderon, B. Bucher, M.P. Carpenter, C.J. Chiara, D. Cline, H.L. Crawford, H.M. David, J. Harker, A.B. Hayes, C.R. Hoffman, B.P. Kay, K. Kolos, A. Korichi, T. Lauritsen, A.O. Macchiavelli, A. Richard, D. Seweryniak, A. Wiens, **Physics Letters B** *754*, 254 (2016).
16. " $\text{SiN}_x\text{:Tb}^{3+}\text{-Yb}^{3+}$, an efficient down-conversion layer compatible with a silicon solar cell process"
L. Dumont, J. Cardin, P. Benzo, M. Carrada, C. Labbe, A. L. Richard, D. C. Ingram, W. M. Jadwisieniczak, **Solar Energy Materials and Solar Cells** *145*, 84 (2016).
17. "Structural and magnetic properties of ferrimagnetic ϵ -phase Mn_4N and antiferromagnetic ζ -phase Mn_{10}N thin films on $\text{MgO}(001)$ "
A. Foley, J. Corbett, A. L. Richard, K. Alam, D. C. Ingram, A. R. Smith, **Journal of Crystal Growth** *446*, 60 (2016).
18. "Structure and magnetism in Ga-rich MnGa/GaN thin films and unexpected giant perpendicular anisotropy in the ultra-thin film limit"
A. O. Mandru, J. P. Corbett, J. M. Lucy, A. L. Richard, F. Yang, D. C. Ingram, A. R. Smith, **Applied Surface Science** *367*, 312 (2016).
19. "Thermal oxidation of silicon in a residual oxygen atmosphere—the RESOX process—for self-limiting growth of thin silicon dioxide films"
J.T. Wright, D. J. Carbaugh, M.E. Haggerty, A.L. Richard, D. C. Ingram, S. Kaya, W. M. Jadwisieniczak, F. Rahman, **Semiconductor Science and Technology** *31* 105007 (2016).
20. "The $^3\text{H}(d,\gamma)^5\text{He}$ Reaction for $E_{c.m.} \leq 300$ keV"
C.E. Parker, C.R. Brune, T.N. Massey, J.E. O'Donnell, A.L. Richard, D.B. Sayre, **EPJ Web of Conferences** *113*, 03005 (2016).
21. "The Breakup Cross Section of the D+D Reaction at 6.94 MeV"
A.L. Richard, C.R. Brune, D.C. Ingram, S. Dhakal, A. Karki, T.N. Massey, J.E. O'Donnell, C.E. Parker, **EPJ Web of Conferences** *113*, 08016 (2016).

Workshops and Training

- **i-process Workshop**, TRIUMF, Vancouver BC, Canada, April 29 - May 1, 2019
- **National Nuclear Physics Summer School (NNPSS)**, Lake Tahoe, CA, June 15-25, 2015
- **Exotic Beam Summer School (EBSS)**, Oak Ridge National Laboratory (ORNL), Oak Ridge, TN, July 27 - August 1, 2014
- **Radiation Detection for Nuclear Security Summer School**, Pacific Northwest National Laboratory (PNNL), June 3-14, 2013

Affiliations

- **Nuclear Policy Working Group at MSU** 2018 - PRESENT
- **American Physical Society (APS)** 2010 - PRESENT
- **APS Division of Nuclear Physics (DNP)** 2010 - PRESENT
- **American Association of Physics Teachers** 2012 - PRESENT
- **American Association of University Women (AAUW)** Ohio University 2014 - PRESENT
- **Women in Physics and Astronomy (WIPHA)** Ohio University 2011 - 2018
- **Omicron Delta Kappa (ODK) National Leadership Honorary** 2010 - PRESENT

Professional Service and Mentoring

Ohio Region Section of the American Physical Society (OSAPS)

ELECTED MEMBER-AT-LARGE

2018 - PRESENT

- Organize OSAPS meetings and provide support to the local organizers
- Increase membership and interest in OSAPS meetings
- Co-lead of sub-committee on diversity-increasing initiatives

2019 JINA-CEE Frontiers in Nuclear Astrophysics Conference

FRIB/NSCL

CO-CHAIR

May 20-24, 2019

- Chair of the junior researchers meeting program
- Organized scientific program, academic and non-academic career panels, and professional development programs
- Co-chair of main meeting, helped organized program and activities

2019 APS Mid-Michigan Conference for Undergraduate Women in Physics

Michigan State University

LOCAL ORGANIZING COMMITTEE

January 18-20, 2019

- Organized and invited speakers for the conference
- Developed a crowdfunding page to raise money for the conference
- Provided support during conference for speakers

2018 APS Conference Experience for Undergraduates (CEU) at DNP

Waikoloa, Hawaii

CEU MENTOR

October 23-27, 2018

- Mentored two undergraduates at the DNP meeting

OHIO Radiation Safety Committee

Ohio University

GRADUATE STUDENT REPRESENTATIVE

2016 - 2018

- Attend meetings of the council to discuss facilities on campus that use radioactive materials
- Read and edit proposals for use of radioactive materials in different labs on campus

Outreach

Physicists Inspiring the Next Generation (PING)

Michigan State University

LECTURER/PANELIST

August 2019

- MSU PING-pilot program for high school students
- Lectured on nuclear astrophysics
- Participated on the "Careers in Nuclear Science" panel

Physics of Atomic Nuclei (PAN)

Michigan State University

PRESENTER

July 2019

- Ran the gamma-spectroscopy laboratory for high school teachers and high school students
- Educated both groups about gamma-ray interactions with matter

MSU Science Festival*Michigan State University*

PRESENTER

2018-2019

- Demonstrated nuclear science concepts for the general public
- Engaged with the public answering questions about experimental nuclear science

Nuclear Physics DC Day*Washington, D.C.*

PRESENTER

2019

- Met with congressional aides for representatives and senators in Ohio
- Discussed the importance and impact of nuclear physics research funding

FRIB/NSCL Open House*Michigan State University*

VOLUNTEER

2019

- Tour-route monitor
- Engaged with the public answering questions about nuclear science done at the laboratory

Margaret Boyd Scholarship Program*Ohio University*

TOUR GUIDE AND SPEAKER

2015 - 2018

- Gave an introductory talk to incoming freshman in the scholars program about being a woman in science
- Gave the scholars a tour of the Edwards Accelerator laboratory

Edwards Accelerator Laboratory*Ohio University*

TOUR GUIDE

2012 - 2018

- Tours given to prospective students, seminar and colloquia speakers, and other visitors