Juan José Manfredi, Ph.D. — Curriculum vitae

Contact Information

Department of Nuclear Engineering
University of California, Berkeley
2521 Hearst Ave
Berkeley, CA 94709

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E-mail: manfredi@berkeley.edu

Education

Michigan State University, East Lansing, MI
Ph.D., Physics — *August 2012 - August 2018*
Graduate Certificate in Computational Modeling — *August 2014 - May 2017*
M.S., Physics — *August 2012 - May 2015*
Thesis Topic: Asymmetry Dependence of Spectroscopic Factors: A Study of Transfer Reactions on Argon Isotopes at 70 MeV/u

Washington University in St. Louis, St. Louis, MO
B.A., Mathematics, Physics — *August 2008 - May 2012*
Summa cum laude, Honors in Physics, and Distinction in Mathematics

Research Experience

Postdoctoral Scholar — *August 2018 - present*
University of California, Berkeley — Berkeley, CA
NSSC Postdoctoral Fellow — *May 2020 - present*
Affiliate, Lawrence Berkeley National Laboratory — *August 2018 - present*
Affiliate, Sandia National Laboratories — *August 2018 - present*

- Lead analysis and simulation software development for Optically Segmented Single-Volume Scatter Camera prototype
- Develop imaging framework for kinematic neutron imaging, including a novel unbinned MLEM analytical image reconstruction approach
- Plan, execute, and analyze accelerated beam experiments for studying neutron response of novel scintillator materials
- Advise undergraduate students on photodetector and scintillator material characterization projects

Research Assistant — *August 2012 - July 2018*
National Superconducting Cyclotron Laboratory (NSCL)
Michigan State University — East Lansing, MI

- Led project team of 20+ to design and execute rare-isotope beam experiments
- Developed software for data acquisition, particle-transport simulation, data analysis, and theoretical modeling of nuclear reactions
- Characterized 1300+ channel silicon-strip-detector array, including sub-micron dead layer thickness measurement

Summer Fellow — *May 2014 - August 2014*
Lawrence Livermore National Laboratory — Livermore, CA

- Modeled neutron star equations of state using a massively parallel multi-physics radiation hydrodynamics code

Undergraduate Assistant — *August 2009 - May 2012*
Washington University in St. Louis — St. Louis, MO

- Led data mining and analysis effort to place new constraints on exotic decay modes relevant for nuclear astrophysics

Peer-reviewed Publications

[1] **J. Manfredi** et al., "Quenching of single particle strengths in direct reactions," *Phys. Rev. C*, 2021 (under review)

[2] G. Gabella, B. L. Goldblum, T. A. Laplace, **J. J. Manfredi**, J. Gordon, Z. W. Sweger, and E. Bourret, "Neutron response of the ej-254 boron-loaded plastic scintillator," *IEEE Transactions on Nuclear Science*, vol. 68, no. 1, pp. 46–53, 2021

[3] G. Jhang, J. Estee, J. Barney, G. Cerizza, M. Kaneko, J. Lee, W. Lynch, T. Isobe, M. Kurata-Nishimura, T. Murakami, C. Tsang, M. Tsang, R. Wang, D. Ahn, L. Atar, T. Aumann, H. Baba, K. Boretzky, J. Brzychczyk, N. Chiga, N. Fukuda, I. Gasparic, B. Hong, A. Horvat, K. Ieki, N. Inabe, Y. Kim, T. Kobayashi, Y. Kondo, P. Lasko, H. Lee, Y. Leifels, J. Łukasik, **J. Manfredi**, A. McIntosh, P. Morfouace, T. Nakamura, N. Nakatsuka, S. Nishimura, R. Olsen, H. Otsu, P. Pawłowski, K. Pelczar, D. Rossi, H. Sakurai, C. Santamaria, H. Sato, H. Scheit, R. Shane, Y. Shimizu, H. Simon, A. Snoch, A. Sochocka, Z. Sosin, T. Sumikama, H. Suzuki, D. Suzuki, H. Takeda, S. Tangwancharoen, H. Toernqvist, Y. Togano, Z. Xiao, S. Yennello, J. Yurkon, Y. Zhang, M. Colonna, D. Cozma, P. Danielewicz, H. Elfner, N. Ikeno, C. M. Ko, J. Mohs, D. Oliinychenko, A. Ono, J. Su, Y. J. Wang, H. Wolter, J. Xu, Y.-X. Zhang, and Z. Zhang, "Symmetry energy investigation with pion production from sn+sn systems," *Physics Letters B*, vol. 813, p. 136016, 2021

[4] T. Laplace, B. Goldblum, J. Bevins, D. Bleuel, E. Bourret, J. Brown, E. Callaghan, J. Carlson, P. Feng, G. Gabella, K. Harrig, **J.J. Manfredi**, C. Moore, F. Moretti, M. Shinner, A. Sweet, and Z. Sweger, "Comparative scintillation performance of EJ-309, EJ-276, and a novel organic glass," *Journal of Instrumentation*, vol. 15, pp. P11020–P11020, nov 2020

[5] T. B. Webb, R. J. Charity, J. M. Elson, D. E. M. Hoff, C. D. Pruitt, L. G. Sobotka, K. W. Brown, J. Barney, G. Cerizza, J. Estee, W. G. Lynch, **J. Manfredi**, P. Morfouace, C. Santamaria, S. Sweany, M. B. Tsang, T. Tsang, Y. Zhang, K. Zhu, S. A. Kuvin, D. McNeel, J. Smith, A. H. Wuosmaa, and Z. Chajecki, "Invariant-mass spectrum of ^{11}O," *Phys. Rev. C*, vol. 101, p. 044317, Apr 2020

[6] K. Zhu, M. Tsang, D. Dell'Aquila, K. Brown, Z. Chajecki, W. Lynch, S. Sweany, F. Teh, C. Tsang, C. Anderson, A. Anthony, J. Barney, J. Crosby, J. Estee, I. Gasparic, G. Jhang, O. Khanal, S. Kodali, **J. Manfredi**, C. Niu, and R. Wang, "Calibration of large neutron detection arrays using cosmic rays," *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 967, p. 163826, 2020

[7] T. Laplace, B. Goldblum, J. Brown, and **J.J. Manfredi**, "Scintillator light yield measurements with waveform digitizers," *Nucl. Inst. and Meth. A*, vol. 959, p. 163485, 2020

[8] **J. J. Manfredi**, B. L. Goldblum, T. A. Laplace, G. Gabella, J. Gordon, A. O'Brien, S. Chowdhury, J. A. Brown, and E. Brubaker, "Proton light yield of fast plastic scintillators for neutron imaging," *IEEE Transactions on Nuclear Science*, vol. 67, no. 2, pp. 434–442, 2020

[9] R. J. Charity, K. W. Brown, J. Okołowicz, M. Płoszajczak, J. M. Elson, W. Reviol, L. G. Sobotka, W. W. Buhro, Z. Chajecki, W. G. Lynch, **J. Manfredi**, R. Shane, R. H. Showalter, M. B. Tsang, D. Weisshaar, J. R. Winkelbauer, S. Bedoor, and A. H. Wuosmaa, "Invariant-mass spectroscopy of ^{14}O excited states," *Phys. Rev. C*, vol. 100, p. 064305, Dec 2019

[10] T. B. Webb, R. J. Charity, J. M. Elson, D. E. M. Hoff, C. D. Pruitt, L. G. Sobotka, K. W. Brown, J. Barney, G. Cerizza, J. Estee, G. Jhang, W. G. Lynch, **J. Manfredi**, P. Morfouace, C. Santamaria, S. Sweany, M. B. Tsang, T. Tsang, S. M. Wang, Y. Zhang, K. Zhu, S. A. Kuvin, D. McNeel, J. Smith, A. H. Wuosmaa, and Z. Chajecki, "Particle decays of levels in ^{11,12}N and ^{12}O investigated with the invariant-mass method," *Phys. Rev. C*, vol. 100, p. 024306, Aug 2019

[11] D. Dell'Aquila, S. Sweany, K. Brown, Z. Chajecki, W. Lynch, F. Teh, C.-Y. Tsang, M. Tsang, K. Zhu, C. Anderson, A. Anthony, S. Barlini, J. Barney, A. Camaiani, G. Jhang, J. Crosby, J. Estee, M. Ghazali, F. Guan, O. Khanal, S. Kodali, I. Lombardo, **J. Manfredi**, L. Morelli, P. Morfouace, C. Niu, and G. Verde, "Non-linearity effects on the light-output calibration of light charged particles in CsI(Tl) scintillator crystals," *Nucl. Inst. and Meth. A*, vol. 929, pp. 162 – 172, 2019

[12] R. J. Charity, K. W. Brown, J. Elson, W. Reviol, L. G. Sobotka, W. W. Buhro, Z. Chajecki, W. G. Lynch, **J. Manfredi**, R. Shane, R. H. Showalter, M. B. Tsang, D. Weisshaar, J. Winkelbauer, S. Bedoor, D. G. McNeel, and A. H. Wuosmaa, "Invariant-mass spectroscopy of ^{18}Ne,^{16} O, and ^{10}C excited states formed in neutron-transfer reactions," *Phys. Rev. C*, vol. 99, p. 044304, Apr 2019

[13] T. B. Webb, S. M. Wang, K. W. Brown, R. J. Charity, J. M. Elson, J. Barney, G. Cerizza, Z. Chajecki, J. Estee, D. E. M. Hoff, S. A. Kuvin, W. G. Lynch, **J. Manfredi**, D. McNeel, P. Morfouace, W. Nazarewicz, C. D. Pruitt, C. Santamaria, J. Smith, L. G. Sobotka, S. Sweany, C. Y. Tsang, M. B. Tsang, A. H. Wuosmaa, Y. Zhang, and K. Zhu, "First observation of unbound ^{11}O, the mirror of the halo nucleus ^{11}Li," *Phys. Rev. Lett.*, vol. 122, p. 122501, Mar 2019

[14] R. J. Charity, K. W. Brown, J. Okołowicz, M. Płoszajczak, J. M. Elson, W. Reviol, L. G. Sobotka, W. W. Buhro, Z. Chajecki, W. G. Lynch, **J. Manfredi**, R. Shane, R. H. Showalter, M. B. Tsang, D. Weisshaar, J. R. Winkelbauer, S. Bedoor, and A. H. Wuosmaa, "Spin alignment following inelastic scattering of ^{17}Ne, lifetime of ^{16}F, and its constraint on the continuum coupling strength," *Phys. Rev. C*, vol. 97, p. 054318, May 2018

[15] **J. Manfredi**, J. Lee, W. Lynch, C. Niu, M. Tsang, C. Anderson, J. Barney, K. Brown, Z. Chajecki, K. Chan, G. Chen, J. Estee, Z. Li, C. Pruitt, A. Rogers, A. Sanetullaev, H. Setiawan, R. Showalter, C. Tsang, J. Winkelbauer, Z. Xiao, and Z. Xu, "On determining dead layer and detector thicknesses for a position-sensitive silicon detector," *Nucl. Inst. and Meth. A*, vol. 888, pp. 177 – 183, 2018

[16] J. Bradt, Y. Ayyad, D. Bazin, W. Mittig, T. Ahn, S. B. Novo, B. Brown, L. Carpenter, M. Cortesi, M. Kuchera, W. Lynch, S. Rost, N. Watwood, J. Yurkon, J. Barney, U. Datta, J. Estee, A. Gillibert, **J. Manfredi**, P. Morfouace, D. Pérez-Loureiro, E. Pollacco, J. Sammut, and S. Sweany, "Study of spectroscopic factors at N = 29 using isobaric analogue resonances in inverse kinematics," *Physics Letters B*, vol. 778, pp. 155 – 160, 2018

[17] K. W. Brown, R. J. Charity, J. M. Elson, W. Reviol, L. G. Sobotka, W. W. Buhro, Z. Chajecki, W. G. Lynch, **J. Manfredi**, R. Shane, R. H. Showalter, M. B. Tsang, D. Weisshaar, J. R. Winkelbauer, S. Bedoor, and A. H. Wuosmaa, "Proton-decaying states in light nuclei and the first observation of ^{17}Na," *Phys. Rev. C*, vol. 95, p. 044326, Apr 2017

[18] A. H. Wuosmaa, S. Bedoor, K. W. Brown, W. W. Buhro, Z. Chajecki, R. J. Charity, W. G. Lynch, **J. Manfredi**, S. T. Marley, D. G. McNeel, A. S. Newton, D. V. Shetty, R. H. Showalter, L. G. Sobotka, M. B. Tsang, J. R. Winkelbauer, and

R. B. Wiringa, "Ground-state properties of ^{5}H from the ^{6}He(d,^{3} He)^{5}H reaction," *Phys. Rev. C*, vol. 95, p. 014310, Jan 2017

[19] K. W. Brown, R. J. Charity, L. G. Sobotka, L. V. Grigorenko, T. A. Golubkova, S. Bedoor, W. W. Buhro, Z. Chajecki, J. M. Elson, W. G. Lynch, **J. Manfredi**, D. G. McNeel, W. Reviol, R. Shane, R. H. Showalter, M. B. Tsang, J. R. Winkelbauer, and A. H. Wuosmaa, "Interplay between sequential and prompt two-proton decay from the first excited state of ^{16}Ne," *Phys. Rev. C*, vol. 92, p. 034329, Sep 2015

[20] D. Sarantites, W. Reviol, J. Elson, J. Kinnison, C. Izzo, **J. Manfredi**, J. Liu, H. Jung, and J. Goerres, "Phoswich wall: A charged-particle detector array for inverse-kinematic reactions with the Gretina/GRETA γ-ray arrays," *Nucl. Inst. and Meth. A*, vol. 790, pp. 42 – 56, 2015

[21] R. J. Charity, J. M. Elson, **J. Manfredi**, R. Shane, L. G. Sobotka, Z. Chajecki, D. Coupland, H. Iwasaki, M. Kilburn, J. Lee, W. G. Lynch, A. Sanetullaev, M. B. Tsang, J. Winkelbauer, M. Youngs, S. T. Marley, D. V. Shetty, and A. H. Wuosmaa, "Spin alignment of excited projectiles due to target spin-flip interactions," *Phys. Rev. C*, vol. 91, p. 024610, Feb 2015

[22] K. W. Brown, R. J. Charity, L. G. Sobotka, Z. Chajecki, L. V. Grigorenko, I. A. Egorova, Y. L. Parfenova, M. V. Zhukov, S. Bedoor, W. W. Buhro, J. M. Elson, W. G. Lynch, **J. Manfredi**, D. G. McNeel, W. Reviol, R. Shane, R. H. Showalter, M. B. Tsang, J. R. Winkelbauer, and A. H. Wuosmaa, "Observation of long-range three-body coulomb effects in the decay of ^{16}Ne," *Phys. Rev. Lett.*, vol. 113, p. 232501, Dec 2014

[23] K. W. Brown, W. W. Buhro, R. J. Charity, J. M. Elson, W. Reviol, L. G. Sobotka, Z. Chajecki, W. G. Lynch, **J. Manfredi**, R. Shane, R. H. Showalter, M. B. Tsang, D. Weisshaar, J. R. Winkelbauer, S. Bedoor, and A. H. Wuosmaa, "Two-proton decay from the isobaric analog state in ^{8}B," *Phys. Rev. C*, vol. 90, p. 027304, Aug 2014

[24] L. G. Sobotka, W. W. Buhro, R. J. Charity, J. M. Elson, M. F. Jager, **J. Manfredi**, M. H. Mahzoon, A. M. Mukhamedzhanov, V. Eremenko, M. McCleskey, R. G. Pizzone, B. T. Roeder, A. Spiridon, E. Simmons, L. Trache, M. Kurokawa, and P. Navrátil, "Proton decay of excited states in ^{12}N and ^{13}O and the astrophysical ^{11}C(p,γ)^{12}N reaction rate," *Phys. Rev. C*, vol. 87, p. 054329, May 2013

[25] I. A. Egorova, R. J. Charity, L. V. Grigorenko, Z. Chajecki, D. Coupland, J. M. Elson, T. K. Ghosh, M. E. Howard, H. Iwasaki, M. Kilburn, J. Lee, W. G. Lynch, **J. Manfredi**, S. T. Marley, A. Sanetullaev, R. Shane, D. V. Shetty, L. G. Sobotka, M. B. Tsang, J. Winkelbauer, A. H. Wuosmaa, M. Youngs, and M. V. Zhukov, "Democratic decay of ^{6}Be exposed by correlations," *Phys. Rev. Lett.*, vol. 109, p. 202502, Nov 2012

[26] M. F. Jager, R. J. Charity, J. M. Elson, **J. Manfredi**, M. H. Mahzoon, L. G. Sobotka, M. McCleskey, R. G. Pizzone, B. T. Roeder, A. Spiridon, E. Simmons, L. Trache, and M. Kurokawa, "Two-proton decay of ^{12}O and its isobaric analog state in ^{12}N," *Phys. Rev. C*, vol. 86, p. 011304, Jul 2012

[27] **J. Manfredi**, R. J. Charity, K. Mercurio, R. Shane, L. G. Sobotka, A. H. Wuosmaa, A. Banu, L. Trache, and R. E. Tribble, "α decay of the excited states in ^{12}C at 7.65 and 9.64 MeV," *Phys. Rev. C*, vol. 85, p. 037603, Mar 2012

[28] R. J. Charity, J. M. Elson, **J. Manfredi**, R. Shane, L. G. Sobotka, Z. Chajecki, D. Coupland, H. Iwasaki, M. Kilburn, J. Lee, W. G. Lynch, A. Sanetullaev, M. B. Tsang, J. Winkelbauer, M. Youngs, S. T. Marley, D. V. Shetty, A. H. Wuosmaa, T. K. Ghosh, and M. E. Howard, "Isobaric multiplet mass equation for A = 7 and 8," *Phys. Rev. C*, vol. 84, p. 051308, Nov 2011

[29] R. J. Charity, J. M. Elson, **J. Manfredi**, R. Shane, L. G. Sobotka, B. A. Brown, Z. Chajecki, D. Coupland, H. Iwasaki, M. Kilburn, J. Lee, W. G. Lynch, A. Sanetullaev, M. B. Tsang, J. Winkelbauer, M. Youngs, S. T. Marley, D. V. Shetty, A. H. Wuosmaa, T. K. Ghosh, and M. E. Howard, "Investigations of three-, four-, and five-particle decay channels of levels in light nuclei created using a ^{9}C beam," *Phys. Rev. C*, vol. 84, p. 014320, Jul 2011

[30] R. J. Charity, J. M. Elson, **J. Manfredi**, R. Shane, L. G. Sobotka, Z. Chajecki, D. Coupland, H. Iwasaki, M. Kilburn, J. Lee, W. G. Lynch, A. Sanetullaev, M. B. Tsang, J. Winkelbauer, M. Youngs, S. T. Marley, D. V. Shetty, A. H. Wuosmaa, T. K. Ghosh, and M. E. Howard, "$2p$-$2p$ decay of ^{8}C and isospin-allowed $2p$ decay of the isobaric-analog state in ^{8}B," *Phys. Rev. C*, vol. 82, p. 041304, Oct 2010

Conference Proceedings

[1] **Juan J. Manfredi**, E. Adamek, J. A. Brown, E. Brubaker, B. Cabrera-Palmer, J. Cates, R. Dorrill, A. Druetzler, J. Elam, P. L. Feng, M. Folsom, A. Galindo-Tellez, B. L. Goldblum, P. Hausladen, N. Kaneshige, K. Keefe, T. A. Laplace, J. G. Learned, A. Mane, P. Marleau, J. Mattingly, M. Mishra, A. Moustafa, J. Nattress, K. Nishimura, J. Steele, M. Sweany, K. Weinfurther, and K.-P. Ziock, "The single-volume scatter camera," in *Hard X-Ray, Gamma-Ray, and Neutron Detector Physics XXII* (A. Burger, S. A. Payne, and M. Fiederle, eds.), vol. 11494, pp. 121 – 131, International Society for Optics and Photonics, SPIE, 2020

Academic Honors

- NSSC Postdoctoral Fellowship *May 2020 - present*
- MSU Dissertation Completion Fellowship *August 2017 - December 2017*
- NNSA Stewardship Science Graduate Fellowship *September 2013 - August 2017*
- NSCL Fellowship *August 2012 - September 2017*
- College of Natural Science Recruiting Fellowship *August 2012 - July 2013*
- MARC U-STAR Fellowship *January 2011 - May 2012*
- Washington University Eliot Scholarship *August 2008 - May 2012*
- Washington University Robert Levis Family Scholarship *August 2008 - May 2012*

Other Publications

[1] J. Manfredi. Personal blog (jmanfredi.github.io), 2019-2021.

[2] J. Manfredi. "Starstruck," Stewardship Science Magazine, 2014.

Invited Talks

[1] *Organic scintillators and their applications in neutron detection*
Air Force Institute of Technology Student Seminar
Online *September 30, 2020*

[2] *The Single Volume Scatter Camera*
SPIE Optical Engineering + Applications
Online *August 20, 2020*

[3] *Asymmetry Dependence of Spectroscopic Factors with Transfer Reactions*
Reaction Seminar 2020, Istituto Nazionale di Fisica Nucleare
Online *June 25, 2020*

[4] *Organic Scintillator Characterization for Neutron Detection*
NSSC Virtual Scholar Showcase 2020
Online *June 3, 2020*

[5] *Fast Neutron Detector Modeling*
Workshop for Applied Nuclear Data Activties 2020
Washington, DC *March 3, 2020*

[6] *An Optically Segmented Single-Volume Scatter Camera for Compact, High-efficiency Neutron Imaging*
University Program Review
Raleigh, NC *June 5, 2019*

[7] *Organic Scintillator Light Yield at Berkeley/LBNL*
Theia Workshop, Fermilab
Batavia, IL *December 13, 2018*

[8] *Extracting Spectroscopic Factors from High-Energy Transfer Reactions*
Bay Area Neutron Group Meeting
Berkeley, CA *January 26, 2018*

[9] *Extracting Spectroscopic Factors from High-Energy Transfer Reactions*
Nuclear Data Seminar, Los Alamos National Laboratory
Los Alamos, NM *December 11, 2017*

[10] *Transfer Reactions on Argon Isotopes*
SSGF Annual Review Meeting
Santa Fe, NM *June 22, 2017*

Teaching Experience

Michigan State University, East Lansing, MI *March 2016 - September 2016*
Institute for Scientists and Engineers Professional Development Program

- Participated in two weekend workshops dedicated to inquiry-based learning, fostering equity and inclusion, and learner assessment techniques
- Designed and ran an inquiry-based physics lab activity for Michigan State students in an introductory course
- Served as substitute lecturer for 200 person introductory course

Washington University, St. Louis, MO *August 2009 - December 2011*
Peer Led Team Learning Leader (Chemistry)

- Led weekly meetings of students in an introductory chemistry course
- Guided students towards correct answers of study problems in order to facilitate understanding of important concepts

Contributed Talks

- *An Optically Segmented Single-Volume Scatter Camera for Compact, High-efficiency Neutron Imaging*
  International Conference on the Application of Nuclear Techniques
  Rethymno, Crete, Greece *June 11, 2019*

- *Asymmetry Dependence of Spectroscopic Factors: A Study of Transfer Reactions on Argon Isotopes at 70 MeV/u*
  NSCL PhD Thesis Defense
  East Lansing, MI *July 16, 2018*

- *Extracting Spectroscopic Factors of Argon Isotopes from Transfer Reactions*
  APS Division of Nuclear Physics Fall Meeting 2017
  Pittsburgh, PA *October 26, 2017*

- *Extracting Spectroscopic Factors of Argon Isotopes from Transfer Reactions*
  Huzhou-CUSTIPEN Workshop on Spectroscopy and Reactions of Exotic Nuclei
  Huzhou, China *July 5, 2017*

- *GPU-Accelerated Lanczos Diagonalization*
  APS Ohio-Region Meeting
  Ypsilanti, MI *May 6, 2017*

- *Extracting Spectroscopic Factors of Argon Isotopes from Transfer Reactions*
  APS April Meeting 2017
  Washington DC *January 31, 2017*

- *Alpha Decay of Excited States in ^{12}C*
  Nuclear Lunch, Washington University in St. Louis
  St. Louis, MO *February 3, 2012*

Professional Service

- Referee
  - ⋆ Department of Energy, Office of Nuclear Physics, SBIR/STTR
  - ⋆ Nuclear Instrumentation and Methods
  - ⋆ Review of Scientific Instruments
  - ⋆ International Journal of Modern Physics
  - ⋆ Radiation Measurements
- Tour Guide
  National Superconducting Cyclotron Laboratory (NSCL) *August 2013 - July 2018*
  - ⋆ Conducted over 30 tours of the lab to audiences with a wide range of technical expertise, often to groups from the local community
- Science and Leadership at Michigan State
  Michigan State University *August 2016 - August 2017*
  - ⋆ Organized summer science camp for middle school students from Lansing Public Schools
  - ⋆ Oversaw activity design, student recruitment, and
- President
  NSCL Graduate Student Organization *August 2015 - August 2016*
  - ⋆ Represented graduate student community to lab leadership
  - ⋆ Organized weekly graduate student seminars

- Outreach Coordinator
  Women and Minorities in the Physical Sciences *August 2015 - May 2016*
  - ⋆ Planned and conducted science education events for general public
  - ⋆ Represented university at the National Society for Black Physicists Annual Meeting
- Volunteer Leader
  Physics of Atomic Nuclei *August 2013 - August 2015*
  - ⋆ Instructed high school teachers from around the country about basic nuclear physics

Professional Memberships

- American Physical Society (2011 - present)
- Joint Institute for Nuclear Astrophysics (2012 - 2018)

Posters

- *Scintillator Characterization of Fast Plastics*
  [1] University Program Review
  Raleigh, NC *June 2-4, 2019*
- *Extracting Spectroscopic Factors Using Transfer Reactions*
  [2] University and Industry Technical Interchange
  Ann Arbor, MI *June 2-4, 2015*

  [3] Stewardship Science Graduate Fellowship Annual Program Review
  Washington D.C. *June 29 - July 2, 2015*

  [4] Stewardship Science Graduate Fellowship Annual Program Review
  Las Vegas, NV *June 27 - June 30, 2016*
- *Investigation of Neutron Star Mass using the Nuclear Equation of State*
  [5] Livermore PLS Division Summer Poster Session
  Livermore, CA *August 2014*
- *The High Resolution Array (HiRA): A Large Solid Angle Silicon Array for Rare Isotope Beam Experiments*
  [6] Stewardship Science Academic Program Symposium
  Washington D.C. *February 19-20, 2014*

  [7] DOE NNSA SSGF Annual Program Review
  Berkeley, CA *June 23-25, 2014*
- *α-decay of excited states in ^{12}C*
  [8] Fall Meeting of the APS Division of Nuclear Physics
  Newport Beach, CA *October 24-27, 2012*

  [9] Nuclear Structure 2012
  Lemont, IL *August 13-17, 2012*

  [10] Washington University Undergraduate Research Symposium
  St. Louis, MO *April 28, 2012*

  [11] St. Louis Area Undergraduate Research Symposium
  St. Louis, MO *April 21, 2012*
- *Mass of ^{8}C and its five body decay through ^{6}Be*
  [12] Fall Meeting of the APS Division of Nuclear Physics
  East Lansing, MI *October 26-29, 2011*