

Christopher L. H. Wrede

National Superconducting Cyclotron Laboratory
Michigan State University
640 S. Shaw Lane, Room 2018
East Lansing, Michigan 48824-1321
USA

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Education

- **Yale University** New Haven, CT, USA
 - Ph.D., physics, 2008 (experimental nuclear astrophysics)
Thesis: *Nuclear energy levels of ^{31}S and astrophysical implications*
 - M.Phil., physics, 2006
 - M.S., physics, 2006
- **Simon Fraser University** Burnaby, BC, Canada
 - M.Sc., physics, 2003 (experimental nuclear astrophysics)
Thesis: *A double sided silicon strip detector as an end detector for the DRAGON recoil mass separator*
- **University of Victoria** Victoria, BC, Canada
 - B.Sc., 2000, physics (major) philosophy (minor)

Employment

- **Associate Professor of Physics** Jul 2017 - present
 - Department of Physics and Astronomy East Lansing, MI, USA
 - Michigan State University
 - National Superconducting Cyclotron Laboratory (NSCL)
- **Assistant Professor of Physics** Aug 2011 - Jun 2017
 - Department of Physics and Astronomy East Lansing, MI, USA
 - Michigan State University
 - National Superconducting Cyclotron Laboratory (NSCL)
- **Research Associate** Apr 2008 - Aug 2011
 - Department of Physics and Astronomy Seattle, WA, USA
 - University of Washington
 - Center for Experimental Nuclear Physics and Astrophysics (CENPA)
- **Research Assistant** May 2004 - Mar 2008
 - Department of Physics New Haven, CT, USA
 - Yale University
 - Wright Nuclear Structure Laboratory (WNSL)
- **Research Assistant** May 2001 - Jul 2003
 - Department of Physics Vancouver, BC, Canada
 - Simon Fraser University
 - TRI-University Meson Facility (TRIUMF)

Awards

- *Thomas H. Osgood Award for Excellence in Teaching*, Michigan State University, Department of Physics and Astronomy (2017)
- *Early Career Research Program*, U.S. Department of Energy, Office of Science (2016)

Funded Grants

- *Critical Thermonuclear Reactions in Classical Novae and Type I X-ray Bursts*, Principal Investigator: Christopher L. H. Wrede, Awarding Agency: United States Department of Energy Office of Science Early Career Research Program, Effective Dates: 7/15/2016-7/15/2021, Total Amount Awarded Including Indirect Costs: \$750,000, Total Amount Awarded to Wrede Including Indirect Costs: \$750,000, Indirect Cost Rate: 55%
- *Operation of the NSCL as a National User Facility and Research Program*, Principal Investigator: Bradley Sherrill, Awarding Agency: U.S. National Science Foundation, Effective Dates: 10/1/2016- 9/30/2021, Total Amount Awarded Including Indirect Costs: \$122,500,000.00, Total Amount Awarded to Wrede Including Indirect Costs: \$1,200,000.00 (projected), Indirect Cost Rate: 55%, Wrede role: Senior Investigator
- *Operation of the NSCL as a National User Facility and Research Program*, Principal Investigator: C. Konrad Gelbke and Bradley Sherrill, Awarding Agency: U.S. National Science Foundation, Effective Dates: 11/15/2011-10/31/2016, Total Amount Awarded Including Indirect Costs: \$112,500,000.00, Total Amount Awarded to Wrede Including Indirect Costs: \$1,160,609.89, Indirect Cost Rate: 52%, Wrede role: Senior Investigator
- *JINA Center for the Evolution of the Elements*, Principal Investigator: Hendrik Schatz, Awarding Agency: U.S. National Science Foundation, Effective Dates: 9/1/2014-8/31/2019, Total Amount Awarded Including Indirect Costs: \$11,400,000.00, Total Amount Awarded to Wrede Including Indirect Costs: \$10,000.00 (projected), Indirect Cost Rate: 52%, Wrede role: Senior Collaborator
- *PFC: Joint Institute for Nuclear Astrophysics, JINA*, Principal Investigator: Michael Wiescher, Awarding Agency: U.S. National Science Foundation, Effective Dates: 9/1/2008-8/31/2014, Total Amount Awarded Including Indirect Costs: \$13,090,000.00, Total Amount Awarded to Wrede Including Indirect Costs: \$20,000.00 (approx.), Indirect Cost Rate: 52%, Wrede role: Senior Collaborator

Teaching

- | | |
|---|---------------------|
| | Aug 2018 - Dec 2018 |
| | Aug 2017 - Dec 2017 |
| Instructor | Aug 2016 - Dec 2016 |
| Michigan State University | Aug 2015 - Dec 2015 |
| • Integrative Studies Phys. Sci. 205: Visions of the Universe | Aug 2014 - Dec 2014 |
| | Jan 2014 - May 2014 |
| | Aug 2012 - Dec 2012 |
| | Jan 2012 - May 2012 |

- Instructor** Jan 2019 - May 2019

 - Michigan State University Jan 2017 - May 2017
 - Physics 983: Nuclear Astrophysics Jan 2015 - May 2015

- Instructor**

 - Michigan State University Jan 2013 - May 2013
 - Physics 440: Electronics

- Instructor**

 - University of Washington Apr 2009 - Jun 2011
 - Physics 401, 402, 403: Special Problems

- Current Group Members**

- ◇ Dr. Moshe Friedman, Ph.D., Research Associate, National Superconducting Cyclotron Laboratory (Fall 2016 - present)
 - ◇ Dr. Lijie Sun, Ph.D., Research Associate, National Superconducting Cyclotron Laboratory (Fall 2018 - present)
 - ◇ Mr. Brent Glassman, B.S., Ph.D. Candidate, Michigan State University (Summer 2013 - present)
 - ◇ Mr. Tamas Budner, B.S., Ph.D. Candidate, Michigan State University (Summer 2016 - present)
 - ◇ Mr. Jason Surbrook, B.S., Ph.D. Candidate, Michigan State University (Fall 2016 - present)
 - ◇ Mr. Tyler Wheeler, B.S., Ph.D. Candidate, Michigan State University (Fall 2018 - present)
 - ◇ Ms. Molly Janasik, undergraduate, Michigan State University (Spring 2017 - present)
 - ◇ Mr. Jordan Stomps, undergraduate, Michigan State University (Fall 2017 - present)

- Former Students and Post-Docs**

- ◇ Ms. Cathleen Fry, graduate (Ph.D.), Michigan State University (Fall 2013 - Fall 2018). Presently Research Associate at Los Alamos National Laboratory.
 - ◇ Mr. Michael Roosa, undergraduate, Michigan State University (Spring 2017 - Summer 2018). Presently Graduate Student at Texas A and M University.
 - ◇ Mr. Pranjal Tiwari, undergraduate, Michigan State University (Spring 2016 - Spring 2018). Presently Graduate Student at University of Toronto.
 - ◇ Mr. Eric Aboud, undergraduate, Michigan State University (Fall 2015 - Summer 2017). Presently Graduate Student at Texas A and M University.
 - ◇ Dr. David Perez Loureiro, Ph.D., Research Associate, National Superconducting Cyclotron Laboratory (Fall 2013 - Fall 2016). Presently Research Associate at University of Tennessee.
 - ◇ Ms. Madison Harris, undergraduate, Michigan State University (Summer 2015 - Fall 2016)

- ◇ Mr. Michael Bennett, graduate (Ph.D.), Michigan State University (Autumn 2011 - Summer 2016). Presently Director of Educational Outreach and Research at JILA and the Physics Education Research Group at the University of Colorado at Boulder with Nobel Prize winner Eric Cornell.
- ◇ Ms. Sarah Schwartz, undergraduate, REU from University of Southern Indiana (Summer 2013) and graduate (M.S.), Michigan State University (Summer 2014 - Spring 2016). Presently Scientist with U.S. Navy
- ◇ Mr. Tyler Miller, undergraduate, Michigan State University (Summer 2015 - Fall 2015)
- ◇ Mr. Jesse Sakstrup, undergraduate, Michigan State University (Autumn 2013 - Spring 2015)
- ◇ Ms. Xu Xinyi, undergraduate, Xi'an Jiao Tong University and Michigan State University (Autumn 2014). Presently Ph.D. candidate in Electrical Engineering at North Carolina State University.
- ◇ Mr. Helin (Eric) Zhang, undergraduate, Xi'an Jiao Tong University and Michigan State University (Autumn 2013). Presently Ph.D. candidate in Physics at University of Chicago.
- ◇ Mr. Marco Santia, undergraduate, Michigan State University (Autumn 2011 - Summer 2013). Presently Ph.D. candidate in Engineering at Michigan State University.
- ◇ Mr. James Quaglia, undergraduate, Michigan State University (Autumn 2011 - Spring 2013). Presently Co-owner of Metro Detroit Designs LLC.
- ◇ Mr. Safwan Shanab, undergraduate, Michigan State University (Autumn 2012 - Spring 2013). Presently Ph.D. candidate in Physics at Michigan State University.
- ◇ Ms. Alice Bowe, undergraduate, REU from Kalamazoo College at Michigan State University (Summer 2012). Presently Ph.D. candidate in Environmental Informatics at University of Michigan.
- ◇ Mr. Ronaldo Ortez, undergraduate, REU from University of Washington at Michigan State University (Summer 2012). Presently Ph.D. candidate at University of California, Davis.
- ◇ Mr. Satoshi Utsuno, undergraduate, Keio University and University of Washington, Physics 402 (Winter 2011); Physics 403 (Spring 2011). Presently Engineer at DENSO.
- ◇ Ms. Anne Sallaska, graduate (Ph.D), University of Washington, Alejandro García advisor (Spring 2008 - Autumn 2010). Presently Data Scientist at Porch.
- ◇ Mr. Brent Delbridge, undergraduate, University of Washington, Physics 402 (Winter 2010). Presently Postdoctoral Associate in Earth and Planetary Sciences at Harvard University.
- ◇ Mr. Blake Freeman, undergraduate, University of Washington, volunteer (Summer 2009); Physics 401 (Autumn 2009); Physics 402 (Winter 2010); Physics 403 (Spring 2010); volunteer (Summer 2010 - Spring 2011). Presently Ph.D. Candidate in Physics at University of California, Los Angeles.
- ◇ Mr. Devin Short, undergraduate, University of Washington, Physics 401 (Summer 2009); hourly (Autumn 2009). Presently Ph.D. Candidate in Physics at Simon Fraser University.
- ◇ Ms. Rachel Vander Giessen, undergraduate, University of Washington, Physics 403 (Spring 2009); Physics 401 (Summer 2009). Presently Oceanographer the University of Washington.

- ◇ Mr. Andy Palmer, undergraduate, University of Washington, Alejandro García advisor (Spring 2008 - Summer 2010). Presently Product Analyst at Zearn.
- ◇ Ms. Kseniya Deryckx, undergraduate, University of Washington, Alejandro García advisor (Spring 2008, Summer 2008). Became M.S. Candidate in Chemistry at University of Washington.

• **Thesis Committees**

- ◇ External Examiner, Mr. Jonathan Williams, *Title TBD*, Simon Fraser University, Ph.D. thesis, defense upcoming Apr 2019
- ◇ Opponent, Ms. Laetitia Canete, *Title TBD*, University of Jyvaskyla, Ph.D. thesis, defense upcoming Mar 2019
- ◇ Mr. Justin Lane, Michigan State University, Ph.D. thesis, expected 2021
- ◇ Chair, Mr. Jason Surbrook, Michigan State University, Ph.D. thesis, expected 2021
- ◇ Mr. Aaron Magilligan, Michigan State University, Ph.D. thesis, expected 2020
- ◇ Mr. Dustin Frisbie, Michigan State University, Ph.D. thesis, expected 2021
- ◇ Chair, Mr. Tamas Budner, Michigan State University, Ph.D. thesis, expected 2021
- ◇ Ms. Alicia Palmisano, Michigan State University, Ph.D. thesis, expected 2020
- ◇ Mr. Adam Jones, Michigan State University, Ph.D. thesis, expected 2018
- ◇ Chair, Mr. Brent Glassman, *²⁰Mg beta decay as a probe of x-ray bursts and fundamental subatomic symmetries*, Michigan State University, Ph.D. thesis, expected 2019
- ◇ Chair, Ms. Cathleen Fry, *Using single neutron transfer reactions to constrain classical nova observables*, Michigan State University, Ph.D. thesis, defended Oct 2018
- ◇ Mr. Christopher Willis, Michigan State University, Ph.D. thesis, *A Search for High Mass Dilepton Resonances at $\sqrt{s} = 14$ TeV with the ATLAS Detector*, defended May 2018
- ◇ External Examiner, Mr. Jaspreet Randhawa, *Spectroscopy of ²⁰Mg of relevance to nuclear astrophysics*, Saint Mary's University, Ph.D. thesis, defended Jul 2017
- ◇ Mr. Tom Finzell, *Investigating Novae as Potential Type Ia Supernova Progenitors*, Michigan State University, Ph.D. thesis, defended Apr 2017
- ◇ Mr. Stefan Rost, *Development of THGEM Based Detectors for AT-TPC Applications*, Michigan State University, M.S. thesis, defended Aug 2016
- ◇ Chair, Ms. Sarah Schwartz, *Observation of Doppler broadening in beta delayed proton-gamma decay*, Michigan State University, M.S. thesis, defended Apr 2016
- ◇ Mr. Greg Meece, Michigan State University, Ph.D. thesis, *AGN Feedback in Simulations of Galaxy Clusters*, defended Apr 2016
- ◇ Chair, Mr. Michael Bennett, Michigan State University, Ph.D. thesis, *Isospin mixing and the ³⁰P(p, γ)³¹S reaction in novae*, defended Jul 2016
- ◇ Opponent, Mr. Morten Lund, *A search for exotic decay modes on the proton drip-line - the cases of ²⁰⁻²¹Mg*, Aarhus University, Ph.D. thesis, defended Feb 2016

- ◇ Ms. LeShawna Valdez, Michigan State University, M.S. thesis, *Electron Captures in Supernovae*, defended Dec 2011

Substitute Instructor

Jan 2012 - present

- Michigan State University
Department of Physics and Astronomy

East Lansing, MI, USA

- ◇ Physics 492/802: Survey of Nuclear Physics. One lecture: *Rare Isotopes: the DNA of Stellar Explosions* (Spring 2017).
- ◇ Physics 492/802: Survey of Nuclear Physics. One lecture: *Experimental Program at NSCL/FRIB* (Spring 2016).
- ◇ Integrative Studies in Physical Science 205: Visions of the Universe. Three lectures: *Telescopes, Solar System formation, Age of Solar System* (Spring 2014).

Co-Developer and Co-Instructor

Mar 2011 - Jun 2011

- University of Washington
Department of Physics

Seattle, WA, USA

- ◇ Physics 499: Undergraduate Research (Basic Tools for Experimental Nuclear Physics). *Rutherford Scattering, Particle Detectors, Basic Electronics and Data Acquisition* (Spring 2011). Evolved into Physics 576: Selected Topics in Experimental Physics.

Substitute Instructor

Nov 2009 - Jan 2010

- University of Washington
Department of Physics

Seattle, WA, USA

- ◇ Physics 114A: Mechanics. Five lectures: *Overview; Position and Velocity; Velocity and Acceleration; Vectors; r , v and a Vectors* (Winter 2010).
- ◇ Physics 116: Waves and Modern Physics. Two lectures: *Electromagnetic Waves I; Electromagnetic Waves II* (Autumn 2009).

Teaching Assistant

Sep 2003 - May 2004, Jul 2005 - Aug 2005

- Yale University
Department of Physics

New Haven, CT, USA

Teaching Assistant

Sep 2000 - Apr 2001

- Simon Fraser University
Department of Physics

Burnaby, BC, Canada

Publications

- S. N. Paneru, C. R. Brune, R. Giri, R. J. Livesay, U. Greife, J. C. Blackmon, D. W. Bardayan, K.A. Chipps, B. Davids, D. S. Connolly, K. Y. Chae, A. E. Champagne, C. Deibel, K. L. Jones, M. S. Johnson, R. L. Kozub, Z. Ma, C. D. Nesaraja, S. D. Pain, F. Sarazin, J. F. Shriner, Jr., D. W. Stracener, M. S. Smith, J. S. Thomas, D. W. Visser, and C. Wrede, *s-wave scattering lengths for the ${}^7\text{Be}+p$ system from an R-matrix analysis*, submitted
- B.E. Glassman, D. Perez-Loureiro, C. Wrede, J. Allen, D.W. Bardayan, M.B. Bennett, B.A. Brown, K.A. Chipps, M. Febraro, M. Friedman, C. Fry, M.R. Hall, O. Hall, S.N. Liddick, P. O'Malley, W. Ong, S.D. Pain, S.B. Schwartz, P. Shidling, H. Sims, P. Thompson, H. Zhang, *Doppler Broadening in ${}^{20}\text{Mg}(\beta p){}^{19}\text{Ne}$ Decay*, submitted, arxiv:1901.01966
- E. Aboud, M.B. Bennett, C. Wrede, M. Friedman, S.N. Liddick, D. Perez-Loureiro, D.W. Bardayan, B.A. Brown, A.A. Chen, K.A. Chipps, C. Fry, B. Glassman, C. Langer, E.I. McNeice, Z. Meisel, W. Ong, P.D. O'Malley, S.D. Pain, C.J. Prokop, H. Schatz, S.B. Schwartz, S. Suchyta, P. Thompson, M. Walters, and X. Xu, *Toward complete spectroscopy using β decay: the case of ${}^{32}\text{Cl}(\beta\gamma){}^{32}\text{S}$* , Phys. Rev. C 98, 024309 (2018)
- M.B. Bennett, C. Wrede, B.A. Brown, S.N. Liddick, D. Perez-Loureiro, D.W. Bardayan, A.A. Chen, K.A. Chipps, C. Fry, B. Glassman, C. Langer, N. Larson, E.I. McNeice, Z. Meisel, W. Ong, P.D. O'Malley, S.D. Pain, C.J. Prokop, H. Schatz, S.B. Schwartz, S. Suchyta, P. Thompson, M. Walters, and X. Xu, *Detailed study of the decay ${}^{31}\text{Cl}(\beta\gamma){}^{31}\text{S}$* , Phys. Rev. C 97, 065803 (2018)
- X. Sun, E. Adamek, B. Allgeier, M. Blatnik, T.J. Bowles, L.J. Broussard, M. A.-P. Brown, R. Carr, S. Clayton, C. Cude-Woods, S. Currie, E.B. Dees, X. Ding, B.W. Filippone, A. Garcia, P. Geltenbort, S. Hasan, K.P. Hickerson, J. Hoagland, R. Hong, G.E. Hogan, A.T. Holley, T.M. Ito, A. Knecht, C.-Y. Liu, J. Liu, M. Makela, J.W. Martin, D. Melconian, M.P. Mendenhall, S. D. Moore, C.L. Morris, S. Nepal, N. Nouri, R.W. Pattie, Jr., A. Perez-Galvan, D.G. Phillips II, R. Picker, M.L. Pitt, B. Plaster, J.C. Ramsey, R. Rios, D. Salvat, A. Saunders, W. Sondheim, S. J. Seestrom, S. Sjue, S. Slutsky, C. Swank, E. Tatar, R.B. Vogelaar, B. VornDick, Z. Wang, J. Wexler, T. Womack, C. Wrede, A.R. Young, and B. A. Zeck, *Search for dark matter decay of the free neutron from the UCNA experiment: $n \rightarrow \chi + e^+e^-$* , Phys. Rev. C 97, 052501(R) (2018)
- M. A.-P. Brown, E.B. Dees, E. Adamek, B. Allgeier, M. Blatnik, T.J. Bowles, L.J. Broussard, R. Carr, S. Clayton, C. Cude-Woods, S. Currie, X. Ding, B.W. Filippone, A. Garcia, P. Geltenbort, S. Hasan, K.P. Hickerson, J. Hoagland, R. Hong, G.E. Hogan, A.T. Holley, T.M. Ito, A. Knecht, C.-Y. Liu, J. Liu, M. Makela, J.W. Martin, D. Melconian, M.P. Mendenhall, S. D. Moore, C.L. Morris, S. Nepal, N. Nouri, R.W. Pattie, Jr., A. Perez-Galvan, D.G. Phillips II, R. Picker, M.L. Pitt, B. Plaster, J.C. Ramsey, R. Rios, D. Salvat, A. Saunders, W. Sondheim, S. J. Seestrom, S. Sjue, S. Slutsky, X. Sun, C. Swank, E. Tatar, R.B. Vogelaar, B. VornDick, Z. Wang, J. Wexler, T. Womack, C. Wrede, A.R. Young, and B. A. Zeck, *New result for the neutron β -asymmetry parameter A_0 from UCNA*, Phys. Rev. C 97, 035505 (2018)*

* This article was highlighted as an *Editor's Suggestion*.

- B.E. Glassman, D. Perez-Loureiro, C. Wrede, J. Allen, D.W. Bardayan, M.B. Bennett, B.A. Brown, K.A. Chipps, M. Febraro, M. Friedman, C. Fry, M.R. Hall, O. Hall, S.N. Liddick, P. O'Malley, W. Ong, S.D. Pain, S.B. Schwartz, P. Shidling, H. Sims, P. Thompson, H. Zhang, *β -delayed γ decay of ^{20}Mg and the $^{19}\text{Ne}(p,\gamma)^{20}\text{Na}$ breakout reaction in Type I X-ray bursts*, Phys. Lett. B 778, 397 (2018)
- G.P.A. Berg, M. Couder, M.T. Moran, K. Smith, M. Wiescher, H. Schatz, U. Hager, C. Wrede, F. Montes, G. Perdikakis, X. Wu, A. Zeller, M.S. Smith, D.W. Bardayan, K.A. Chipps, S.D. Pain, J. Blackmon, U. Greife, K.E. Rehm, R.V.F. Janssens, *Design of SECAR: a Recoil Mass Separator for Astrophysical Capture Reactions with Radioactive Beams*, Nucl. Instrum. Methods Phys. Res., Sect. A 877, 87 (2018)
- K. P. Hickerson, X. Sun, Y. Bagdasarova, D. B. Berguno, L. J. Broussard, M. A.-P. Brown, R. Carr, S. Currie, X. Ding, B. W. Filippone, A. Garcia, P. Geltenbort, J. Hoagland, A. T. Holley, R. Hong, T. M. Ito, A. Knecht, C.-Y. Liu, J. L. Liu, M. Makela, R. R. Mammei, J. W. Martin, D. Melconian, M. P. Mendenhall, S. D. Moore, C. L. Morris, R. W. Pattie, Jr., A. Perez Galvan, R. Picker, M. L. Pitt, B. Plaster, J. C. Ramsey, R. Rios, A. Saunders, S. J. Seestrom, E. I. Sharapov, W. E. Sondheim, E. Tatar, R. B. Vogelaar, B. VornDick, C. Wrede, A. R. Young, and B. A. Zeck, *First direct constraints on Fierz interference in free-neutron β decay*, Phys. Rev. C 96, 042501(R) (2017)
- C. Wrede, B.E. Glassman, D. Perez-Loureiro, J. Allen, D.W. Bardayan, M.B. Bennett, B.A. Brown, K.A. Chipps, M. Febraro, C. Fry, M.R. Hall, O. Hall, S.N. Liddick, P. O'Malley, W. Ong, S.D. Pain, S.B. Schwartz, P. Shidling, H. Sims, P. Thompson, H. Zhang, *New portal to the $^{15}\text{O}(\alpha,\gamma)^{19}\text{Ne}$ resonance triggering CNO-cycle breakout*, Phys. Rev. C 96, 032801(R) (2017)
- D. Perez-Loureiro, C. Wrede, M.B. Bennett, S.N. Liddick, A. Bowe, B.A. Brown, A.A. Chen, K.A. Chipps, N. Cooper, D. Irvine, E. McNeice, F. Montes, F. Naqvi, R. Ortez, S.D. Pain, J. Pereira, C. Prokop, J. Quaglia, S.J. Quinn, J. Sakstrup, M. Santia, S.B. Schwartz, S. Shanab, A. Simon, A. Spyrou, E. Thiagalingam, *Confirmation of the isomeric state in ^{26}P* , Phys. Rev. C 96, 014306 (2017)
- S. Triambak, L. Phuthu, A. Garcia, G.C. Harper, J.N. Orce, D. A. Short, S.P.R. Steininger, A. Diaz Varela, R. Dunlop, D.S. Jamieson, W.A. Richter, G.C. Ball, P.E. Garrett, C.E. Svensson, and C. Wrede, *The $2_1^+ \rightarrow 3_1^+$ gamma width in ^{22}Na and second class currents*, Phys. Rev. C 95, 035501 (2017)
- A. Parikh, C. Wrede, C. Fry, *Toward concordance of E_x and J^π values for proton unbound ^{31}S states*, Eur. Phys. J. Plus 131, 345 (2016)
- D. Perez-Loureiro, C. Wrede, M.B. Bennett, S.N. Liddick, A. Bowe, B.A. Brown, A.A. Chen, K.A. Chipps, N. Cooper, D. Irvine, E. McNeice, F. Montes, F. Naqvi, R. Ortez, S.D. Pain, J. Pereira, C. Prokop, J. Quaglia, S.J. Quinn, J. Sakstrup, M. Santia, S.B. Schwartz, S. Shanab, A. Simon, A. Spyrou, E. Thiagalingam, *β delayed γ decay of ^{26}P : Possible evidence of a proton halo*, Phys. Rev. C 93, 064320 (2016)
- M.B. Bennett, C. Wrede, B.A. Brown, S.N. Liddick, D. Perez-Loureiro, D.W. Bardayan, A.A. Chen, K.A. Chipps, C. Fry, B. Glassman, C. Langer, N. Larson, E.I. McNeice, Z. Meisel, W. Ong, P.D. O'Malley, S.D. Pain, C.J. Prokop, S.B. Schwartz, S. Suchyta, P.

Thompson, M. Walters, and X. Xu, *Isobaric multiplet mass equation in the $A = 31$, $T = 3/2$ quartets*, Phys. Rev. C 93, 064310 (2016)

- M. B. Bennett, C. Wrede, B. A. Brown, S. N. Liddick, D. Perez-Loureiro, D. W. Bardayan, A. A. Chen, K. A. Chipps, C. Fry, B. Glassman, C. Langer, N. Larson, E. I. McNeice, Z. Meisel, W. Ong, P. D. O'Malley, S. D. Pain, C. J. Prokop, H. Schatz, S. B. Schwartz, S. Suchyta, P. Thompson, M. Walters, and X. Xu, *Isospin mixing reveals $^{30}P(p,\gamma)^{31}S$ resonance influencing nova nucleosynthesis*, Phys. Rev. Lett. 116, 102502 (2016)*

* This article was highlighted as an *Editor's Suggestion*.

- O.S. Kirsebom, C. Akers, P. Bender, A. Cheeseman, G. Christian, R. Churchman, D. Cross, B. Davids, L.J. Evitts, J. Fallis, N. Galinski, A.B. Garnsworthy, G. Hackman, L. Lighthall, S. Ketelhut, P. Machule, D. Miller, C. Nobs, C.J. Pearson, M.M. Rajabali, A. Radich, A. Rojas, C. Ruiz, A. Sanetullaev, C.D. Unsworth, C. Wrede, *Measurement of Lifetimes in ^{23}Mg* , Phys. Rev. C 93, 025802 (2016)

- B.E. Glassman, D. Perez-Loureiro, C. Wrede, J. Allen, D.W. Bardayan, M.B. Bennett, B.A. Brown, K.A. Chipps, M. Febraro, C. Fry, M.R. Hall, O. Hall, S.N. Liddick, P. O'Malley, W. Ong, S.D. Pain, S.B. Schwartz, P. Shidling, H. Sims, P. Thompson, H. Zhang, *Revalidation of the isobaric multiplet mass equation for the $A = 20$ quintet*, Phys. Rev. C 92, 042501(R) (2015)

- S.B. Schwartz, C. Wrede, M.B. Bennett, S.N. Liddick, D. Perez-Loureiro, A. Bowe, A.A. Chen, K.A. Chipps, N. Cooper, D. Irvine, E. McNeice, F. Montes, F. Naqvi, R. Ortez, S.D. Pain, J. Pereira, C. Prokop, J. Quaglia, S.J. Quinn, J. Sakstrup, M. Santia, S. Shanab, A. Simon, A. Spyrou, E. Thiagalingam, *Observation of Doppler broadening in β delayed proton- γ decay*, Phys. Rev. C 92, 031302(R) (2015)

- C. Fry, C. Wrede, S. Bishop, B.A. Brown, A.A. Chen, T. Faestermann, R. Hertenberger, A. Parikh, D. Perez-Loureiro, H.-F. Wirth, A. García, R. Ortez, *Discovery of $^{34g,m}Cl(p,\gamma)^{35}Ar$ resonances activated at classical nova temperatures*, Phys. Rev. C 91, 015803 (2015)

- B. Alex Brown, W. A. Richter, C. Wrede, *Shell-model studies of the astrophysical rapid-proton-capture reaction $^{30}P(p,\gamma)^{31}S$* , Phys. Rev. C 89, 062801(R) (2014)

- C. Wrede, *The $^{30}P(p,\gamma)^{31}S$ reaction in classical novae: progress and prospects*, AIP Advances 4, 041004 (2014)*

* This article was highlighted temporarily as an *Editor's Suggestion*.

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* This article was highlighted as an *Editors' Suggestion*.

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Leadership of Experiments at Large National User Facilities

- Spokesperson
National Superconducting Cyclotron Laboratory (NSCL), Experiment 18507
Additional time for e17023
Approved by NSCL Director; 24 hours of beam time allotted
Status: completed
- Spokesperson
National Superconducting Cyclotron Laboratory (NSCL), Experiment 18033
The XRBTPC Experiment
PAC42 evaluation: approved; 259 hours of beam time allotted
Status: awaiting scheduling

- Spokesperson
National Superconducting Cyclotron Laboratory (NSCL), Experiment 17024
Beta delayed proton decay of ^{31}Cl
PAC41 evaluation: proposal conditionally approved; 117 hours of beam time allotted
Status: on reserve
- Spokesperson
National Superconducting Cyclotron Laboratory (NSCL), Experiment 17023
Commissioning a new proton detector
PAC41 evaluation: approved; 117 hours of beam time allotted; Status: completed
- Co-spokesperson
Tri-University Meson Facility (TRIUMF), Experiment S1582
 $^{30}\text{P}(p, \gamma)^{31}\text{S}$ Reaction Rate in Novae: Lifetimes of ^{31}S States
EEC evaluation: approved with medium priority
Status: first run completed; second run scheduled for August, 2018
- Spokesperson
National Superconducting Cyclotron Laboratory (NSCL), Experiment 14066
Science with ^{20}Mg
PAC 38 evaluation: approved; 127 hours of beam time allotted
Status: completed
- Spokesperson
National Superconducting Cyclotron Laboratory (NSCL), Experiment 12028
Are Presolar Nova grains from Novae?
PAC 37 evaluation: approved; 123 hours of beam time allotted
Status: completed
- Spokesperson
National Superconducting Cyclotron Laboratory (NSCL), Experiment 10034
Nucleosynthesis of Galactic ^{26}Al in Classical Novae
PAC 35 evaluation: approved; 77 hours of beam time allotted
Status: completed
- Co-spokesperson
Argonne National Laboratory, Argonne Tandem Linac Accelerator System (ATLAS),
Experiment 1259
Precise mass measurements of ^{32}Cl and ^{31}S
PAC evaluation: Priority II (should be granted beam time if at all possible)
Status: completed
- Co-spokesperson
Tri-University Meson Facility (TRIUMF), Experiment S1108
The $^{30}\text{P}(p, \gamma)^{31}\text{S}$ Reaction Rate in Classical Novae
EEC evaluation: approved with high priority
Status: awaiting ^{30}P beam development

Professional Affiliations and Services

- Elected Member, *Advisory Committee to the Department Chair (ADCOM)*, Department of Physics and Astronomy, Michigan State University, East Lansing, MI (Chair Nov 2018 - present, Vice Chair May 2018 - Oct 2018, Secretary May 2017 - May 2018)
- Co-organizer, *Probing Neutron Stars through Neutron Star Mergers*, DNP-DAP Joint Invited Session, APS April Meeting, Denver, CO (Apr 2019)
- Co-organizer, *Radionuclide Astronomy*, DNP-DAP Joint Invited Session, APS April Meeting, Denver, CO (Apr 2019)
- Co-organizer, *Neutron Lifetime Anomaly*, Mini Symposium, APS April Meeting, Denver, CO (Apr 2019)
- Organizer, *r-process in the era of neutron star merger observations*, satellite workshop to the 4th Joint Meeting of the APS Division of Nuclear Physics and the Physical Society of Japan, Waikoloa, HI (Oct 2018)
- Graduate Program Committee, MSU Department of Physics and Astronomy (Sep 2018 - present)
- Local Organizing Committee, *6th International Conference on Proton Emitting Nuclei (PROCON2019)*, East Lansing, MI (June 3-7, 2019)
- Peer Reviewer, *French National Research Agency (ANR)* (2018-)
- Member, *Program Committee*, American Physical Society, Division of Nuclear Physics (Jan 2018-)
- Administrator, *Travel Grant Award Program*, American Physical Society, Division of Nuclear Physics (Nov 2017-)
- Board of Directors, *Exotic Beam Summer School* (Aug 2017-)
- Peer Reviewer, *U.S. Department of Energy* (2017-)
- Peer Reviewer, *Canada Foundation for Innovation* (2016-)
- Peer Reviewer, *Indo-U.S. Science and Technology Forum* (2016-)
- Peer Reviewer, *U.S. National Science Foundation* (2016-)
- Advisory Committee, *Nuclear Science Summer School (NS³)*, East Lansing, MI (Oct 2015-)
- *SECAR Collaboration Council* (May 2015-)
- Guest Editor, *European Physical Journal Plus* (2014-)
- Peer Reviewer, *European Physical Journal A* (2014-)
- Senior Investigator, *Joint Institute for Nuclear Astrophysics*, Michigan State University, East Lansing, MI (Aug 2011-)
- Peer Reviewer, *Nuclear Instruments and Methods in Physics Research B* (2011-)
- Peer Reviewer, *Nuclear Data Sheets* (2010-)

- Peer Reviewer, *Physical Review Letters* (2010-)
- Peer Reviewer, *Physical Review C* (2009-)
- Member, *American Association for the Advancement of Science* (2007-)
- Member, *Canadian Association of Physicists* (2007-)
 - *Division of Nuclear Physics*
 - *Division of Particle Physics*
 - *Division of Atmospheric and Space Physics*
- Member, *American Physical Society* (2007-)
- Member, *NSCL/FRIB Open House Committee* (East Lansing, MI, USA; 2018)
- Cross Disciplinary Specialist, *FRIB Promotion and Reappointment Committee for Continuing Appointment Engineers*, Michigan State University, East Lansing, MI (2018)
- *Beam Physicist Search Committee*, National Superconducting Cyclotron Laboratory, East Lansing, MI (Dec 2017-Aug 2018)
- Chair, *Graduate Student Recruiting Committee*, National Superconducting Cyclotron Laboratory, East Lansing, MI (Aug 2017-Jul 2018)
- *Graduate Program, Recruiting, and Admissions Committee*, Department of Physics and Astronomy, Michigan State University, East Lansing, MI (Aug 2017-Jul 2018)
- *Women and Minorities Lecture Series Committee*, National Superconducting Cyclotron Laboratory, East Lansing, MI (Jul 2017-Jun 2018)
- *Seminar Committee*, National Superconducting Cyclotron Laboratory, East Lansing, MI (Jul 2017-Jun 2018)
- Speaker, *U.S. National Nuclear Physics Summer School* (3 lectures on Experimental Aspects of Nuclear Astrophysics), Yale University, New Haven, CT (Jun 2018)
- Judge, *University Undergraduate Research and Arts Forum (UURAF)*, Michigan State University (Apr 2018)
- *Committee for Promotion to Associate Professor with Tenure*, Department of Physics and Astronomy, Michigan State University, East Lansing, MI (May 2017-April 2018)
- *Colloquium Committee*, Department of Physics and Astronomy, Michigan State University, East Lansing, MI (Aug 2016-April 2018)
- Panelist, *College of Natural Science Workshop on Reappointment, Promotion, and Tenure*, Michigan State University, East Lansing, MI (Mar 2018)
- *CNS Graduate Recruiting Fellowship Committee*, College of Natural Science, Michigan State University (Jan 2018)
- Chair, *Outreach Committee*, National Superconducting Cyclotron Laboratory, East Lansing, MI (Jul 2013-Jul 2017)

- *2nd-Year Graduate Astronomy Project Committee* of Daniel Huizenga, Department of Physics and Astronomy, Michigan State University, East Lansing, MI (Jan 2017)
- *Graduate Program Committee*, Department of Physics and Astronomy, Michigan State University, East Lansing, MI (Aug 2015- Jul 2016)
- *Graduate Recruiting Committee*, National Superconducting Cyclotron Laboratory, East Lansing, MI (Aug 2015-Jul 2016)
- Consultant, *Nuclear Data Sheets*, with Jun Chen regarding new presentation format (Apr 2016)
- Session chair, *JINA-CEE Frontiers*, University of Notre Dame, South Bend, IN (Mar 2016)
- *FRIB Experimental Faculty Search Committee*, Facility for Rare Isotope Beams, East Lansing, MI (Nov 2015-Mar 2016)
- Chair, *Seminar Committee*, National Superconducting Cyclotron Laboratory, East Lansing, MI (Jul 2014-Jul 2015)
- Chair, *Electronics Committee*, National Superconducting Cyclotron Laboratory, East Lansing, MI (Jul 2012-Aug 2014)
- *2nd-Year Graduate Astronomy Project Committee* of Tom Finzell, Department of Physics and Astronomy, Michigan State University, East Lansing, MI (Jul 2014)
- *High Energy Physics Experimental Faculty Search Committee*, Department of Physics and Astronomy, Michigan State University, East Lansing, MI (Aug 2013-May 2014)
- Founding member, *Accreting White Dwarfs Club*, Michigan State University, East Lansing, MI (Apr 2013-2014)
- Contributor, *Development of new MSU graduate course PHY 950: Statistics and Data Analysis Methods* (2014)
- *Undergraduate Program Committee*, Department of Physics and Astronomy, Michigan State University, D (Aug 2012 - Aug 2013)
- Leader, *Radiation-Safety Plan for New ReA3 Experimental Hall* (Jun 2012 - Mar 2013)
- Session chair, *Center for Nuclear Astrophysics Workshop*, Shanghai Jiao Tong University, Shanghai, China (May 2013)
- Session chair, *American Physical Society April Meeting*, “Session C3: Invited Session: Novel Detection in Low-Energy Nuclear Physics,” (Apr 2013)
- Session chair, *Frontiers 2012: A Conference on Nuclear Astrophysics* (2012)
- Member, *The New York Academy of Sciences* (2007-2008)

Outreach

- Member, FRIB/NSCL Open House Committee (East Lansing, MI, May 2018 - Aug 2018)

- Speaker, *Nuclear Science Summer School: NS³*, for undergraduate students (East Lansing, MI, May 2018)
- Speaker, *Nuclear Science Summer School: NS³*, for undergraduate students (East Lansing, MI, May 2017)
- Speaker *Pre-Solar Grains*, invited contribution to nationally syndicated radio program, The Academic Minute (2016)
- Co-founder, *Project to Develop NSCL/FRIB Exhibit at Impression 5 Science Center* (East Lansing, MI, 2016)
- Interviewee, *Collingwood School* student science project (Sep 2016)
- Speaker, *Physics of Atomic Nuclei 2016*, for high school students (East Lansing, MI, Aug 2016)
- Speaker, *Physics of Atomic Nuclei 2016*, for high school teachers (East Lansing, MI, Jul 2016)
- Co-chair, FRIB/NSCL Open House Committee (East Lansing, MI, Apr 2016 - Aug 2016)
- Speaker, *Nuclear Astrophysics*, for Kiwanis Club (East Lansing, MI, May 2016)
- Advisory Committee, *Nuclear Science Summer School (NS3)*, East Lansing, MI (Oct 2015-)
- Speaker, *Physics of Atomic Nuclei 2015*, for high school students (East Lansing, MI, Jul 2015)
- Speaker, *Physics of Atomic Nuclei 2015*, for high school teachers (East Lansing, MI, Jul 2015)
- Chair, Outreach Committee, *National Superconducting Cyclotron Laboratory* (East Lansing, MI, USA; Jul 2013 - Jul 2017)
- Speaker, *Physics of Atomic Nuclei 2014*, for high school students (East Lansing, MI, Aug 2014)
- Speaker, *Physics of Atomic Nuclei 2014*, for high school teachers (East Lansing, MI, Jul 2014)
- Interviewee, *MSU's New FRIB Project Getting National Attention* television news story, WLNS-6 News, MI, USA (Mar 2014)
- Discussion leader and interviewee, *MSU "Science Journalism" class (JRN 472/872) visit to NSCL* (East Lansing, MI, USA; Feb. 2014)
- Event Supervisor, *MI Science Olympiad, State Tournament* (East Lansing, MI, USA; Apr 2013)
- Instructor, *MI Science Olympiad, Coach's Workshop* (East Lansing, MI, USA; Dec 2012)
- Event Supervisor, *MI Science Olympiad, State Tournament* (East Lansing, MI, USA; Apr 2012)

- Volunteer, *MI Science Olympiad, Regional Tournament* (Lansing, MI, USA; Feb 2012)
- Tour Guide, *Yale Physics Olympics: Wright Nuclear Structure Laboratory* (New Haven, CT, USA; Oct 2006)
- Instructor, *CERN Outreach Event: In Affiliation with the International Symposium “Nuclei in the Cosmos - IX”* (Geneva, Switzerland; Jun 2006)

Patents

- ^{114m}In low energy electron source, U.S. Patent Application No. 61/441,913, unpublished (filing date Feb. 1, 2011) (Christopher Wrede *et al.*, applicants)

Invited Conference Presentations

- *Title TBD*, The 2019 International Conference on Proton Emitting Nuclei, Michigan State University, East Lansing, MI (upcoming, Jun 2019)
- *Title TBD*, Canadian Association of Physicists Congress, Simon Fraser University, Burnaby, BC, Canada (upcoming, Jun 2019)
- *Experimental Aspects of Nuclear Astrophysics* (3 lectures), U.S. National Nuclear Physics Summer School, Yale University, New Haven, CT (Jun 2018)
- *Studies of proton-rich nuclei at FRIB*, FRIB Decay Station Workshop, National Superconducting Cyclotron Laboratory, East Lansing, MI (Jan 2018)
- *Beta decays of the neutron deficient chlorine isotopes*, Cyclotron Institute 50 Years of Beam Symposium, Texas A and M University, College Station, TX, USA (Nov 2017)
- *Beta Decay Near the Proton Drip Line*, Low Energy Nuclear Physics Community Meeting, Argonne National Laboratory, Lemont, IL, USA (Aug 2017)
- *Overview of Experimental Aspects of Astrophysical Nucleosynthesis*, 2017 Workshop on Microphysics in Computational Relativistic Astrophysics (MICRA2017), East Lansing, MI (Jul 2017)
- *Beta decay spectroscopy studies of novae and x-ray bursts*, Nuclear Physics in Astrophysics VIII, Catania, Italy (Jun 2017)
- *Rare Isotopes: the DNA of Stellar Explosions*, invited presentation, 2017 Meeting of the American Association for the Advancement of Science (Feb 2017)
- *Thermonuclear runaways investigated using drip line beta decays*, 2016 Meeting of the American Physical Society, Division of Nuclear Physics, Vancouver, BC, Canada (Oct 2016)
- *Decay Measurements at FRIB*, Low-Energy Community Meeting, Si Array Working Group, University of Notre Dame, South Bend, IN (Aug 2016)
- *Beta Delayed Proton Emission Detector*, Low-Energy Community Meeting, TPC Working Group, University of Notre Dame, South Bend, IN (Aug 2016)

- *Nuclear astrophysics and fundamental symmetries using the beta delayed gamma decay of proton rich nuclides*, FRIB Decay Station Collaboration Meeting, Oak Ridge National Laboratory, Oak Ridge, TN (Jan 2016)
- *A gas-filled detector of beta delayed low-energy charged particle emissions for astrophysical applications*, FRIB Decay Station Collaboration Meeting, Oak Ridge National Laboratory, Oak Ridge, TN (Jan 2016)
- *Explosive nucleosynthesis on accreting compact stars*, 12th Conference on the Intersections of Particle and Nuclear Physics, Vail, CO, USA (May 2015)
- *The Facility for Rare Isotope Beams*, The 15th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, Dresden, Germany (Aug 2014)
- *Nuclear reactions in Novae*, Joint DNP Town Meetings on Nuclear Structure and Nuclear Astrophysics, Texas A & M University, College Station, TX, USA (Aug 2014)
- *Introduction to Classical Novae*, Classical Novae in the Cosmos workshop, Debrecen, Hungary (Jul 2014)
- *Overview of the $^{30}\text{P}(p, \gamma)^{31}\text{S}$ reaction in novae*, Classical Novae in the Cosmos workshop, Debrecen, Hungary (Jul 2014)
- *Nuclear Astrophysics with FRIB*, Inauguration Symposium of the Center for Nuclear Astrophysics, Shanghai Jiao Tong University, Shanghai, China (May 2013)
- *Nuclear astrophysics at NSCL and FRIB*, Canadian Association of Physicists Congress, University of Calgary, Calgary, AB, Canada (Jun 2012)
- *Production of the γ -ray emitters ^{22}Na and ^{26}Al in classical novae*, American Physical Society April Meeting, Anaheim, CA, USA (Apr 2011)
- *Absolute resonance strength measurements of the $^{22}\text{Na}(p, \gamma)^{23}\text{Mg}$ reaction*, Canadian Workshop on the Nuclear Astrophysics of Stars, TRIUMF, Vancouver, BC, Canada (Dec 2010)
- *Mass measurements of $T=2$ nuclides*, TITAN collaboration meeting, TRIUMF, Vancouver, BC, Canada (May 2010)
- *Status of the Ultra Cold Neutron Beta Asymmetry (UCNA) experiment*, Los Alamos Neutron Science Center (LANSCE) users group meeting, Santa Fe, NM, USA (Sep 2009)

Invited Colloquiums and Seminars

- *Title TBD*, University of Tennessee, Nuclear Physics Seminar, Knoxville, TN, USA (upcoming, Feb 2019)
- *Rare isotope probes of thermonuclear astrophysical explosions*, Michigan State University, Department of Physics and Astronomy, Colloquium, East Lansing, MI, USA (Oct 2016)
- *Laboratory experiments to probe thermonuclear astrophysical explosions*, McMaster University, Department of Physics, Colloquium, Hamilton, ON, Canada (Sep 2016)

- *Drip line beta decays to probe thermonuclear astrophysical explosions*, University of Notre Dame, Department of Physics, Colloquium, South Bend, IN, USA (Jan 2015)
- *Nuclear Astrophysics and Fundamental Symmetries via Beta Decay at NSCL*, Colloquium, TRIUMF, Vancouver, BC, Canada (Dec 2014)
- *Beta decay as a probe of explosive nucleosynthesis in classical novae*, invited presentation, 23rd Conference on Application of Accelerators and Research in Industry, San Antonio, TX, USA (May 2014)
- *Nucleosynthesis in classical novae*, Colloquium, Department of Physics, The George Washington University, Washington DC, DC, USA (Mar 2011)
- *Nucleosynthesis in classical novae*, Seminar, Michigan State University, East Lansing, MI, USA (Mar 2011)
- *Thermonuclear reaction rates and nova nucleosynthesis*, Seminar, Department of Physics and Astronomy, Rutgers University, Nuclear Physics Piscataway, NJ, USA (Feb 2011)
- *Nucleosynthesis in classical novae*, Colloquium, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA, USA (Jan 2011)
- *Thermonuclear reaction rates and nova observables*, Lunch Research Discussion, Joint Institute for Nuclear Astrophysics, Michigan State University, East Lansing, MI, USA (Nov 2010)
- *Precise nuclear masses via magnetic spectroscopy*, Seminar, Technische Universität München, Garching, Germany (Nov 2009)
- *Nuclear energy levels of ^{31}S and astrophysical implications*, Seminar, Center for Experimental Nuclear Physics and Astrophysics, University of Washington, Seattle, WA, USA (Nov 2007)
- *New $^{30}\text{P}(p, \gamma)^{31}\text{S}$ resonances and oxygen-neon nova nucleosynthesis*, Seminar, SNOLAB, Sudbury, ON, Canada (Aug 2007)

Other Presentations

- *World Class Research Opportunities Across the Courtyard at NSCL and FRIB*, Society of Physics Students meeting, Michigan State University, East Lansing, MI, USA (Sep 2017)
- *Nuclear Astrophysics*, invited presentation (for high-school students), Physics of Atomic Nuclei 2017, East Lansing, MI (Jul 2017)
- *Experimental Nuclear Astrophysics*, invited presentation (for undergraduate students), Nuclear Science Summer School, East Lansing, MI (May 2017)
- *Thermonuclear Runaways Investigated Using Beta Decay Experiments*, selected contributed presentation, JINA-CEE Frontiers meeting, Lansing, MI (Feb 2017)
- *Nuclear Astrophysics*, invited presentation (for high-school students), Physics of Atomic Nuclei 2016, East Lansing, MI (Aug 2016)

- *Nuclear Astrophysics*, invited presentation (for high-school teachers), Physics of Atomic Nuclei 2016, East Lansing, MI (Jul 2016)
- *Nuclear Astrophysics*, invited presentation (for high-school students), Physics of Atomic Nuclei 2015, East Lansing, MI (Jul 2015)
- *Nuclear Astrophysics*, invited presentation (for high-school teachers), Physics of Atomic Nuclei 2015, East Lansing, MI (Jul 2015)
- *Nuclear Astrophysics*, invited presentation (for high-school students), Physics of Atomic Nuclei 2014, East Lansing, MI (Aug 2014)
- *Nuclear Astrophysics*, invited presentation (for high-school teachers), Physics of Atomic Nuclei 2014, East Lansing, MI (Jul 2014)
- *Re-examination of Yale $^{31}\text{P}(^3\text{He},t)^{31}\text{S}$ spectra in light of new data and relation to the $^{30}\text{P}(p,\gamma)^{31}\text{S}$ reaction in novae*, contributed presentation, Classical Novae in the Cosmos workshop, Debrecen, Hungary (Jul 2014)
- *Beta delayed gamma decay measurements to probe thermonuclear astrophysical explosions*, selected contributed presentation, Nuclei in the Cosmos XIII symposium, Debrecen, Hungary (Jul 2014)
- *Nuclear physics of classical novae*, MSU Accreting White Dwarfs Club, discussion leader, Michigan State University, East Lansing, MI, USA (Jun 2014)
- *Double beta decay nuclear structure via electron capture on ^{116}In* , contributed presentation, April 2013 Meeting of the American Physical Society, Denver, CO, USA (Apr 2013)
- *Experiments to predict the composition of nova shrapnel*, NSCL Staff Information Talk, invited presentation, National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, MI, USA (Feb 2013)
- *Nova nucleosynthesis via beta delayed gamma decay at NSCL*, Frontiers 2012: Conference on Nuclear Astrophysics, contributed presentation, Michigan State University, East Lansing, MI, USA (Oct 2012)
- *Experiments to Understand Novae*, Low Energy Nuclear Physics Community Meeting, Nuclear Astrophysics Breakout Session, contributed presentation, Argonne National Laboratory, Argonne, IL, USA (Aug 2012)
- *β decay of ^{26}P to determine the $^{25}\text{Al}(p,\gamma)^{26}\text{Si}$ reaction rate in novae*, poster presentation, 12th International Symposium on Nuclei in the Cosmos, Cairns, Queensland, Australia (Aug 2012)
- *Electron capture on ^{116}In and double beta decay*, Research Discussion, National Superconducting Cyclotron Laboratory, East Lansing, MI, USA (Nov 2011)
- *Partitioning the double beta decay of ^{116}Cd : electron capture on ^{116}In* , contributed presentation, Meeting of the American Physical Society Division of Nuclear Physics, East Lansing, MI, USA (Oct 2011)
- *Production of the γ -ray emitters ^{22}Na and ^{26}Al in classical novae*, Lunch Talk, Large Synoptic Survey Telescope group, University of Washington, Seattle, WA, USA (Jul 2011)

- *Astrophysics and particle physics with rare isotopes*, Research Discussion, National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, MI, USA (Mar 2011)
- *Masses and excitation energies of ^{20}Na , ^{24}Al , ^{28}P , ^{32}Cl , and ^{36}K : precision measurements*, Monday Meeting Talk, Center for Experimental Nuclear Physics and Astrophysics, University of Washington, Seattle, WA, USA (Oct 2010)
- *Properties of ^{20}Na , ^{24}Al , ^{28}P , ^{32}Cl , and ^{36}K for the rp process*, contributed presentation, 11th International Symposium on Nuclei in the Cosmos, Heidelberg, Germany (Jul 2010)
- *Mass of the lowest $T = 2$ level in ^{32}Cl* , contributed presentation, Third Joint Meeting of the American Physical Society's Division of Nuclear Physics and the Physical Society of Japan, presentation, Waikoloa, HI, USA (Oct 2009)
- *Mass of the lowest $T = 2$ level in ^{32}Cl* , Monday Meeting Talk, Center for Experimental Nuclear Physics and Astrophysics, University of Washington, Seattle, WA, USA (Aug 2009)
- *Beta decay of ^{32}Ar for fundamental tests*, Argonne-ATLAS users meeting, presentation, Argonne, IL, USA (Aug 2009)
- *Reconciliation of world data on the thermonuclear $^{25}\text{Al}(p,\gamma)^{26}\text{Si}$ reaction rate in classical novae*, Monday Meeting Talk, Center for Experimental Nuclear Physics and Astrophysics, University of Washington, Seattle, WA, USA (Oct 2008)
- *First measurement of the $^{31}\text{P}(\beta\text{He},t)^{31}\text{S}$ reaction: a study of the thermonuclear $^{30}\text{P}(p,\gamma)^{31}\text{S}$ reaction rate*, contributed presentation, 10th International Symposium on Nuclei in the Cosmos, Mackinac Island, MI, USA (Jul 2008)
- *Measurement of $^{23}\text{Mg}+p$ resonance energies*, poster, 10th International Symposium on Nuclei in the Cosmos, Mackinac Island, MI, USA (Jul 2008)
- *Nuclear energy levels of ^{31}S and astrophysical implications*, Ph.D. thesis defense, Yale University, New Haven, CT, USA (Mar 2008)
- *Studying the $^{30}\text{P}(p,\gamma)^{31}\text{S}$ reaction using the $^{31}\text{P}(\beta\text{He},t)^{31}\text{S}^*(p)^{30}\text{P}$ reaction*, contributed presentation, American Physical Society April Meeting, Jacksonville, FL, USA (Apr 2007)
- *^{60}Fe anomaly in a deep sea manganese crust and implications for a nearby supernova source*, field oral exam presentation, Yale University, New Haven, CT, USA (2006)
- *$^{26}\text{Al}^m + p$ resonances in ^{27}Si* , contributed presentation, The 3rd European Summer School for Nuclear Astrophysics, Santa Tecla, Italy (2005)
- *A Double Sided Silicon Strip Detector as an End Detector for the DRAGON Recoil Mass Separator*, M.Sc. thesis defense, Simon Fraser University, Burnaby, BC, Canada (2003)
- *DRAGON's Focal Plane Detection Systems*, contributed presentation, Western Regional Nuclear and Particle Physics Conference, Lake Louise, AB, Canada (2003)
- *Exotic Compact Stars*, Physics 505 presentation and review paper, University of British Columbia, Vancouver, BC, Canada (2002)

- *A Double Sided Silicon Strip Detector as an End Detector for DRAGON*, poster, Electromagnetic Isotope Separator (EMIS-14) conference, Victoria, BC, Canada (2002)
- *Dark Matter Detection*, Physics 506 presentation, University of British Columbia, Vancouver, BC, Canada (2002)
- *Ultra High Energy Cosmic Rays*, Physics 801 presentation, Simon Fraser University, Burnaby, BC, Canada (2001)
- *Liquid Mirror Telescopes*, Physics 801 presentation, Simon Fraser University, Burnaby, BC, Canada (2001)

Editorials

- C. Wrede *Focus Point on evaluation of the ^{30}P proton capture reaction rate in classical novae*, Eur. Phys. J. Plus 132, 394 (2017)

Conference Proceedings

- K. Schmidt *et al.*, *X-ray Burst Studies with the JENSA Gas Target*, Proceedings of the 14th International Symposium on Nuclei in the Cosmos, JPS Conf. Proc. 14, 021107 (2017)
- C. Fry *et al.*, *Discovery of $^{34g,m}\text{Cl}(p,\gamma)^{35}\text{Ar}$ Resonances Relevant for Classical Nova Nucleosynthesis*, Proceedings of the 14th International Symposium on Nuclei in the Cosmos, JPS Conf. Proc. 14, 020502 (2017)
- W.A. Richter, B.A. Brown, C. Wrede, *Determination of the important $^{30}\text{P}(p,\gamma)^{31}\text{S}$ astrophysical rapid-proton capture reaction rate*, Proceedings of the 14th International Conference on Nuclear Reaction Mechanisms, submitted to the CERN Proceedings series.
- G. Berg, D. W. Bardayan, J. C. Blackmon, K. A. Chipps, M. Couder, U. Greife, U. Hager, F. Montes, K. E. Rehm, H. Schatz, M. S. Smith, M. Wiescher, C. Wrede, *A Recoil Separator for Nuclear Astrophysics SECAR*, Proceedings of the 17th International Conference on Electromagnetic Separators and Related Topics, Nucl. Instrum. Methods B 376, 165 (2016)
- C. Wrede for the NSCL Experiment 10034, 12028, and 14066 Collaborations, *β delayed γ decay measurements to probe thermonuclear astrophysical explosions*, Proceedings of Science (13th International Symposium on Nuclei in the Cosmos), 039 (2015)
- M.B. Bennett, C. Wrede, K.A. Chipps, J. José, S.N. Liddick, M. Santia, A. Bowe, A.A. Chen, N. Cooper, D. Irvine, E. McNeice, F. Montes, F. Naqvi, R. Ortez, S.D. Pain, J. Pereira, C. Prokop, J. Quaglia, S.J. Quinn, S.B. Schwartz, S. Shanab, A. Simon, A. Spyrou, E. Thiagalingam, *Measurement of the Beta Decay of ^{26}P to Determine Classical Nova ^{26}Al Production in the Milky Way Galaxy*, Proceedings of Science (13th International Symposium on Nuclei in the Cosmos), 040 (2015)
- C. Wrede, *The Facility for Rare Isotope Beams*, Proceedings of the 15th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics (CGS15), EPJ Web of Conferences 93, 07001 (2015)

- C. Wrede, M. B. Bennett, S. N. Liddick, D. W. Bardayan, A. Bowe, B. A. Brown, A. A. Chen, K. A. Chipps, N. Cooper, C. Fry, B. Glassman, D. Irvine, J. Jose, C. Langer, N. Larson, E. I. McNeice, Z. Meisel, F. Montes, F. Naqvi, S. D. Pain, P. O'Malley, R. Ortez, W. Ong, J. Pereira, D. Perez-Loureiro, C. Prokop, J. Quaglia, S. Quinn, M. Santia, H. Schatz, S. B. Schwartz, A. Simon, S. Shanab, A. Spyrou, S. Suchyta, E. Thiagalingham, P. Thompson, M. Walters, *β decay as a probe of explosive nucleosynthesis in classical novae*, Proceedings of the 23rd Conference on Applications of Accelerators in Research and Industry (CAARI 2014), Physics Procedia 66, 532 (2015)
- C. Wrede for the NSCL Experiment 10034 collaboration, *β decay of ^{26}P to determine the $^{25}\text{Al}(p, \gamma)^{26}\text{Si}$ reaction rate in novae*, Proceedings of Science (12th International Symposium on Nuclei in the Cosmos), 242 (2013)
- A. Knecht, Z. T. Alexander, Y. Bagdasarova, T. M. Cope, B. G. Delbridge, X. Fléchar, A. García, R. Hong, E. Liénard, P. Mueller, O. Naviliat-Cuncic, A. S. C. Palmer, R. G. H. Robertson, D.W. Storm, H. E. Swanson, I. Towner, S. Utsuno, W. Williams, C. Wrede, and D.W. Zumwalt, *Weak Interaction Studies with ^6He* , 11th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2012), AIP Conf. Proc. 1560, 636 (2013)
- A. Parikh, Th. Faestermann, R. Krücken, V. Bildstein, S. Bishop, K. Eppinger, C. Herlitzius, O. Lepyoshkina, P. Maierbeck, D. Seiler, K. Wimmer, R. Hertenberger, H.-F. Wirth, J. Fallis, U. Hager, D. Hutcheon, Ch. Ruiz, L. Buchmann, D. Ottewell, B. Freeman, Ch. Wrede, A. García, B. Delbridge, A. Knecht, A. Sallaska, A. A. Chen, J. A. Clark, C. M. Deibel, B. Fulton, A. Laird, U. Greife, B. Guo, E. Li, Z. Li, G. Lian, Y. Wang, W. Liu, P. D. Parker, K. Setoodehnia, *Improving the $^{33}\text{S}(p, \gamma)^{34}\text{Cl}$ Reaction Rate for Models of Classical Nova Explosions*, Frontiers in Nuclear Structure, Astrophysics, and Reactions (FINUSTAR 3), AIP Conference Proceedings, 1377, 188 (2011)
- A. A. Chen, K. Setoodehnia, J. Chen, J. A. Clark, C. M. Deibel, S. D. Geraedts, D. Kahl, P. D. Parker, D. Seiler, C. Wrede, *Proton-Rich Sulphur and Nucleosynthesis in Classical Novae*, The 4th International Conference on Proton Emitting Nuclei and Related Topics, AIP Conference Proceedings, 1409, 63 (2011)
- C. Wrede, J. A. Clark, C. M. Deibel, T. Faestermann, R. Hertenberger, A. Parikh, H. Wirth, S. Bishop, A. A. Chen, K. Eppinger, B. M. Freeman, R. Krücken, O. Lepyoshkina, G. Rugel, K. Setoodehnia, *Precision measurements of ^{20}Na , ^{24}Al , ^{28}P , ^{32}Cl , and ^{36}K for the rp process*, Proceedings of Science (11th International Symposium on Nuclei in the Cosmos), 198 (2010)
- A. L. Sallaska, C. Wrede, A. García, D. W. Storm, T. A. D. Brown, C. Ruiz, K. Snover, D. F. Ottewell, L. Buchmann, C. Vockenhuber, D. A. Hutcheon, J. A. Caggiano, *Destruction of ^{22}Na in novae: surprising results from an absolute measurement of $^{22}\text{Na}(p, \gamma)^{23}\text{Mg}$ resonance strengths*, Proceedings of Science (11th International Symposium on Nuclei in the Cosmos), 122 (2010)
- A. Parikh, T. Faestermann, R. Krücken, V. Bildsten, S. Bishop, K. Eppinger, C. Herlitzius, O. Lepyoshkina, P. Maierbeck, D. Seiler, K. Wimmer, R. Hertenberger, H.-F. Wirth, J. Fallis, U. Hager, D. A. Hutcheon, C. Ruiz, L. Buchmann, D. Ottewell, B. Freeman, C. Wrede, A. García, B. Delbridge, A. Knecht, A. Sallaska, A. A. Chen, J. A. Clark, C. M. Deibel, B. Fulton, A. Laird, U. Greife, B. Guo, E. Li, Z. Li, G. Lian, Y. Wang, P. D.

Parker, K. Setoodehnia, *The $^{33}\text{S}(p, \gamma)^{34}\text{Cl}$ reaction in classical nova explosions*, Proceedings of Science (11th International Symposium on Nuclei in the Cosmos), 065 (2010)

- K. Setoodehnia, A.A. Chen, J. Chen, J.A. Clark, C.M. Deibel, D. Kahl, W.N. Lennard P.D. Parker, C. Wrede, *Study of Astrophysically Important Resonant States in ^{30}S Using the $^{32}\text{S}(p, t)^{30}\text{S}$ Reaction*, The 10th International Conference on Nucleus-Nucleus Collisions proceedings, Nucl. Phys. A834, 205c (2010)
- K. Setoodehnia, A.A. Chen, J. Chen, J.A. Clark, C.M. Deibel, D. Kahl, W.N. Lennard P.D. Parker, C. Wrede, *Study of Astrophysically Important Resonant States in ^{30}S Using the $^{32}\text{S}(p, t)^{30}\text{S}$ Reaction*, Nuclear Physics and Astrophysics IV proceedings, Journal of Physics: Conference Series 202, 012042 (2010)
- K. Setoodehnia, A.A. Chen, J. Chen, J.A. Clark, C.M. Deibel, D. Kahl, W.N. Lennard P.D. Parker, C. Wrede, *Study of Astrophysically Important Resonant States in ^{30}S Using the $^{32}\text{S}(p, t)^{30}\text{S}$ Reaction*, Second International Workshop on Compound Nuclear Reactions and Related Topics, Eur. Phys. J. Web of Conferences 2, 14005 (2010)
- C.M. Deibel, J.A. Clark, R. Lewis, A. Parikh, P.D. Parker, C. Wrede, *Toward an experimentally determined $^{26m}\text{Al}(p, \gamma)^{27}\text{Si}$ reaction rate in O Ne novae*, Fusion08: New aspects of Heavy Ion Collisions Near the Coulomb Barrier proceedings, AIP Conf. Proc. 1098, 175 (2009)
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Faculty Development

- MSU Office of the Vice President for Research and Graduate Studies
 - NSF Panel Discussion: Hard Science/Biology, Kellogg Center, 2:45-4:00pm February 11th, 2016

- MSU University Outreach and Engagement
 - COMPASS Science Communication Workshop for Faculty and Academic Staff, Kellogg Center, 9:00am-noon, May 18th, 2016
 - Broader Impacts for Investigators Workshop, Kellogg Center, 1:30-4:30pm February 4th, 2016
- MSU Center for Integrative Studies in Natural Science Workshops
 - Emergency Training, S. Kedzie 107, 1:30-3:00pm, August 29th, 2016
 - Undergraduate Learning Goals and Course Accessibility, N. Kedzie 212, 11:30am-1:30pm, August 26th, 2015
 - Accreditation, N. Kedzie 212, 11:30am-1:30pm, November 21st, 2014
- American Physical Society and American Association of Physics Teachers, New Faculty Workshop, Baltimore, MD, June 25th-28th, 2012
- American Physical Society, Faculty Mentoring Session, Kellogg Hotel and Conference Center, East Lansing, MI, October 29th, 2011, 2-5pm
- MSU College of Natural Science Workshops
 - Reappointment, Promotion and Tenure Workshop, CNS 105, 12:00am-2:00pm March 30th, 2016
 - Promoting Student Success in the Classroom Workshop, Union Ballroom, 12:00-2:00pm, March 24th, 2016
 - Reappointment, Promotion and Tenure Workshop, CNS 105, 11:30am-1:30pm March 20th, 2013
 - Reappointment, Promotion and Tenure Workshop, CNS 105, 11:30am-1:30pm September 21st, 2011
 - Workshop on Grant Proposals, BPS 1425, 12-2pm, September 6th, 2011
 - New Faculty Orientation, CNS 105, 3:30pm-5:00pm, August 29th, 2011
- MSU Orientation for Tenure System and Health Program Faculty, Continuing System Librarians, National Superconducting Cyclotron Laboratory Appointments, and Executive Managers, August 23rd, 2011, The Kellogg Center, 7:30am-1:30pm; Information Fair, 1:30pm-3:00pm
- MSU Faculty and Organizational Development Workshops
 - Survive and Thrive in the MSU Tenure System, MSU Union, 8:30am-noon, February 21st, 2013
 - Getting Started at MSU: An Overview of Faculty Responsibilities and Regulations Related to Accessing and Protecting Student Information, 1-3pm, August 17, 2011
 - Office of the Registrar: Requirements, Resources, and Recommendations, 1-3pm, August 17, 2011
 - Developing the Course Syllabus, 1-3pm, August 17, 2011

- MSU Technology Orientation for New Faculty
 - Research Resources Track (Library Research Resources, Data Management at MSU, iCER/High Performance Computing), 1:00-4:30pm, August 16, 2011
 - Instructional Resources Track (Technology Resources, Library Teaching Resources, ANGEL, Classroom Technology), 8:30am-12:15pm, August 17, 2011
- MSU STEM Teaching Essentials Workshops
 - Shifting your small class strategies to big class contexts: Tips for making big classes seem small(er), 11:15-1:00pm, February 13th, 2018
 - Starting off on the right foot: Organizing Your First Day of Class, 11:30am-1:30pm, Plant and Soil Sciences 1200, August 23rd, 2012
 - Effective Assessment and Evaluation, 11:30am-1:30pm, 3405 Engineering, November 11th, 2011
 - Starting off on the right foot: Organizing Your First Day of Class, 11:30am-1:30pm, Erickson 103, August 29th, 2011
- Lilly Teaching Teaching Seminar Series
 - Deborah Meizlish, Metacognitive Strategies to Foster Students' Disciplinary Thinking and Writing Skills, 1-3pm, November 11th, 2011, Kellogg Center, Centennial Rooms
 - Students Speak: Students with Multiple Marginalized Identities, 2-5pm, October 6th, MSU Union, Gold Rooms A and B
 - Gerald Noisch, An Introduction to the Fundamentals of Critical Thinking and the Art of Instruction, 9am-4pm, September 30th, MSU Union, Gold Rooms A and B
 - Karl Smith, Active and Cooperative Learning, 1-4pm, September 22nd, MSU Union, Gold Rooms A and B
 - Karl Smith, Scholarship of Teaching and Learning, 9am-noon, September 22nd, MSU Union, Gold Rooms A and B
- MSU Office of Institutional Equity
 - Liz Abdnour, Relationship Violence and Sexual Misconduct training, October 24th, 2017
- National Superconducting Cyclotron Laboratory
 - Phishing Awareness Training, online, 2017
 - Matt Helm and Scott Becker, Graduate Student Wellness, April 20th, 2017, 3:00pm, NSCL Lecture Hall
 - Kristine Moore, MSU Assistant General Council, Guidelines for Positive Student/Faculty Interactions, noon-1:00pm, May 18th, 2016, BPS 1400
 - Faculty Search Committee Training, online 2016
 - Faculty Mentoring Lunch, March 21st, 2016, noon-1:00pm, Nuclear Conference Room
 - Procurement Technical Representatives (PTR) Training, 2016

- Melissa Congleton, Bruce Fowler, and John Cecil (FBI), Foreign Travel, December 2nd, 2015, Nuclear Conference Room
- Electrical Safety Awareness Training, online 2015
- Matt Helm and Scott Becker, Graduate Student Mental Health, November 11th, 2014, 4:00pm, BPS 1300
- Deborah Dezure, Effective Practices in Faculty Mentoring, February 22nd, 2013
- Level II Boundaries Training, online, 2011
- Environmental Management System Introduction, online, 2011
- Back Safety Training, online, 2011
- Stop Work Order Training, online, 2011
- Quality Management System Introduction, online, 2011
- Occupational Health and Safety Management System Introduction, online, 2011
- Work Alone Policy Training, online, 2011
- Safety Sign Standard Training, online, 2011
- Ladder Safety Training, online, 2011
- Radiation Safety Level II Training, online, annually since 2011
- Radioactive Source User Training, online, 2011
- General Employee Refresher Training, online, annually since 2011
- MSU Registrar's Office
 - The Top 10 of Security Awareness, online, 2016
 - PCI DSS Fundamentals, online, 2016
 - Acceptable Use Policy for MSU Information Technology Resources, online, 2016
 - MSU Institutional Data Policy, online, 2016
 - MSU Information Technology Security Standard, online, 2016
 - FERPA for MSU Faculty and Staff, online, 2016
- MSU Department of Physics and Astronomy
 - Julie Posselt and Casey Miller, Workshop on Graduate Admissions Practices, 9am-noon, September 8th, 2017, BPS Building
- MSU STEM Alliance
 - Carl Wieman, Taking a scientific approach to the learning and teaching of science, 3-5pm, September 15th, 2017, Kellogg Lincoln Room
- MSU Communications and Brand Strategy and the College of Arts and Letters
 - Communicating Beyond Journals and Peers: Your Online Presence, 1-4pm, March 21st, 2018, Digital Scholarship Lab, MSU Library