

Adam L. Fritsch, PhD

Associate Professor of Physics, Gonzaga University

Curriculum Vitae

CONTACT INFORMATION	Gonzaga University Department of Physics 502 E. Boone Ave. Spokane, WA 99258	<i>Phone:</i> (509) 313 - 6616 <i>Office:</i> Herak 311C <i>E-mail:</i> fritscha@gonzaga.edu <i>Website:</i> fritscha.weebly.com
EDUCATION	PhD, Physics , Michigan State University, East Lansing MI Area of Specialization: Experimental Nuclear Physics, advised by Wolfgang Mittig Dissertation: “ The Search for Cluster Structure in ^{14}C with the Prototype AT-TPC ” Secondary Area of Emphasis: Physics Education Research	August 2014
	MS, Physics , Michigan State University, East Lansing MI	December 2011
	AB, Physics , Wabash College, Crawfordsville IN ΦBK, <i>Magna Cum Laude</i> , Minor in Mathematics	May 2009
ACADEMIC POSITIONS	Associate Professor of Physics Assistant Professor of Physics Gonzaga University, Spokane WA	Fall 2019 to Present Fall 2015 to Summer 2019
	Adjunct Professor of Physics Robert and Rene Glidden Visiting Professor Ohio University, Athens OH	Fall 2022 to Present Fall 2021 to Spring 2022
	Consulting Editor Associate Editor American Journal of Physics	Spring 2023 to Present Summer 2021 to Spring 2023
	FRIB Visiting Scholar for Experimental Science Facility for Rare Isotope Beams (FRIB), East Lansing MI	Summer 2017
	Visiting Research Scientist National Superconducting Cyclotron Laboratory (NSCL), East Lansing MI	Summer 2015
	Visiting Assistant Professor of Physics The College of Wooster, Wooster OH	Fall 2014 to Spring 2015
	Graduate Research & Teaching Assistant Michigan State University & NSCL	Summers 2009 to 2014
RESEARCH GRANTS & AWARDS	Reichert Foundation ALPhA Immersion Equipment Grant Competitively awarded \$500 towards the purchase of a lock-in amplifier for use in upper-level physics laboratory experiments.	Fall 2023
	Robert and Rene Glidden Visiting Professorship Award Competitively awarded \$20,000 by the Executive Vice President and Provost of Ohio University towards a one-year academic appointment to conduct experimental nuclear physics research at the Edwards Accelerator Laboratory as a distinguished visitor who has attained wide recognition based upon artistic, engineering, historical, literary, or scientific achievement.	Fall 2021 to Spring 2022
	Gonzaga Science Research Program Grant Received funding for myself and undergraduates to perform nuclear structure and astrophysical calculations, travel to national laboratories for collaboration, and present at national conferences.	Summers 2016 to 2023

Center for Integration of Research, Teaching, & Learning Forum Award Fall 2019
Competitively awarded \$700 to travel to the 6th National Center for Integration of Research, Teaching, & Learning (CIRTL) Forum in Philadelphia PA by the CIRTL Alumni Network.

Reichert Foundation ALPhA Immersion Equipment Grant Fall 2018
Competitively awarded \$2,650 towards the purchase of a superconducting quantum interference device for use in upper-level physics laboratory experiments.

FRIB Visiting Scholar for Experimental Science Award Summer 2017
Competitively awarded a \$5,000 stipend to perform research at FRIB/NSCL while taking part in a short term stay at FRIB/NSCL. One of only two awardees.

National Science Foundation Research Opportunity Award Summer 2015
Competitively awarded \$14,000 to conduct research at NSCL with one of my undergraduate students and to present our findings at the 2015 APS Division of Nuclear Physics Fall Meeting.

APEX Mini Grant for Experiential Learning, College of Wooster March 2015
Competitively awarded \$1,115 – one-third of total funding for term – to take Nuclear Physics course students to NSCL to see large-scale nuclear physics research firsthand.

Sophomore Research Program Grant, College of Wooster Spring & Summer 2015
Received funding for undergraduates to perform nuclear reaction calculations and gas calibrations with the PAT-TPC at College of Wooster, NSCL, and the University of Notre Dame.

FELLOWSHIPS &
HONORS

Nuclei in the Cosmos XIV, Best Symposium Poster June 21, 2016
Nuclei in the Cosmos XIV, Niigata, Japan
Poster: *Search for α -Cluster Structure in Exotic Nuclei with the Prototype Active Target Time Projection Chamber.*

Future Academic Scholars in Teaching (FAST) Fellow 2013 to 2014
Michigan State University
Competitively chosen by the Graduate School and Center for the Integration of Research Teaching and Learning (CIRTL) Steering Committee to participate in a mentored teaching program with a focus on investigating how Modern Physics is taught.

Michigan State University College of Natural Science Summer Dissertation Completion Fellowship 2013 to 2014

NSCL Summer Dissertation Completion Fellowship 2013 to 2014

Wabash College Physics Department Writing Prize May 2009

Wabash College Harold Q Fuller Prize in Physics: Top Junior Major April 2008

PROFESSIONAL
WORKSHOPS,
SCHOOLS, &
TRAININGS

ICEP, Integrating Computational and Experimental Physics May 2024
Invited to attend, trip fully funded by ICEP, second annual meeting
TeachSpin, Buffalo NY

Murdock College Science Research Conference Faculty Enrichment Workshop November 11 2023
Vancouver WA

ALPhA Immersion Workshop: Condensed Matter Physics June 2023
TeachSpin, Buffalo NY

Gonzaga University Workshops & Trainings	
• Center for Teaching & Advising: Access and Success - Reducing Barriers to Enhance Learning for All - A Proactive Approach - Universal Design for Learning	Spring 2024
• Center for Teaching & Advising: Access and Success - Reducing Barriers to Enhance Learning for All - Workshop on Multilingual Students	Spring 2024
• Center for Teaching & Advising: Access and Success - Reducing Barriers to Enhance Learning for All - Improving the Transfer Student Experience	Spring 2024
• Center for Teaching & Advising: Inclusive Syllabus Workshop	Spring 2023
• The Cataldo Project	Spring 2021
• Inclusive Pedagogical Practices Workshop	Spring 2019
• Center for Teaching & Advising: Teaching Writing in the 21st Century	Spring 2018
• Faculty Career Affiliate Training	Spring 2018
• Safe Space Training	Spring 2018
• Center for Teaching & Advising: Course Design Institute	Spring 2017
• Center for Teaching & Advising: Advising Academy	2016 to 2017
ICEP, Integrating Computational and Experimental Physics Invited to attend, trip fully funded by ICEP, inaugural meeting TeachSpin, Buffalo NY	June 2023
Murdock College Science Research Conference Faculty Enrichment Workshop Vancouver WA	November 11 2023
ALPhA Immersion Workshop: Condensed Matter Physics TeachSpin, Buffalo NY	June 2023
ICEP, Integrating Computational and Experimental Physics Invited to attend, trip fully funded by ICEP, inaugural meeting TeachSpin, Buffalo NY	June 2023
Tandem Van de Graaff Accelerator Operator 1 and 2 Training Edwards Accelerator Laboratory, Ohio University, Athens OH	2021 to 2022
Murdock College Science Research Conference Faculty Enrichment Workshop Vancouver WA	November 9 2019
National Center for Integration of Research, Teaching, & Learning Forum Drexel University, Philadelphia PA	October 2019
American Association of Physics Teachers Summer Workshops Brigham Young University, Provo UT	July 2019
ALPhA Immersion Workshop: Organizing an Advanced Lab Course Caltech, Pasadena CA	June 2019
ALPhA Immersion Workshop: High T_c Superconductivity SUNY Buffalo State, Buffalo NY	July 2018
Neutron Star Merger Summer School FRIB/NSCL, Michigan State University, East Lansing MI	May 2018

AAC&U Transforming STEM Higher Education Conference: Discovery, Innovation, and the Value of Evidence November 2017
San Francisco CA

PICUP Summer Faculty Development Workshop for Integration of Computational Physics into Undergraduate Curriculum July 2017
University of Wisconsin at River Falls, River Falls WI

Active Targets & Time Projection Chambers for Nuclear Physics Experiments Workshop May 2015
Michigan State University, East Lansing MI

TALENT Course 6: Theory for Exploring Nuclear Reactions Experiments July 2013
Grand Accélérateur National d'Ions Lourds (GANIL), Caen, France

FN Tandem Van de Graaff Accelerator Operator's School February 2013
Nuclear Science Laboratory, University of Notre Dame, South Bend IN

Second UIO-MSU-ORNL School on Nuclear Physics January 2011
Michigan State University, East Lansing MI

MEDIA
CONTRIBUTIONS

KXLY Spokane March 2, 2022
'Constantly monitoring': Concerns rise over nuclear radiation, state proactively prepares for worst-case scenario

COMMUNITY,
PROFESSIONAL,
& ACADEMIC
SERVICE

Journal Referee

- American Journal of Physics
- Physical Review Letters
- Physical Review C

American Physical Society and American Association of Physics Teachers

- SPS-AAPT-ALPhA Undergraduate Award for Outstanding Laboratory Development Committee Member 2024 - Present
- APS DNP Conference Experience for Undergraduates Reviewer 2016 to 2018
- 2019 APS-Northwest Section Meeting Convener and Session Chair May 16 to 19, 2019
- 2018 Fall Meeting of APS DNP Session Chair October 27, 2018
- 2017 Fall Meeting of APS DNP Session Chair October 28, 2017
- 2016 APS April Meeting Session Chair April 17, 2016
- 2015 Fall Meeting of APS DNP Session Chair October 30, 2015
- APS DNP Education Committee Inaugural Graduate Student Rep. 2013 to 2014

Professional and Community

- Murdock College Science Research Conference Student Talk and Poster Judge, Forest Grove OR November 10 & 11, 2023
- Murdock College Science Research Conference Student Talk and Poster Judge, Vancouver WA November 8 & 9, 2019
- Nuclear Physics DC Day Participant, Washington DC March 11, 2019
- Logan Community Family Dinner Volunteer January 8, 2019
- Council on Undergraduate Research Posters on the Hill Reviewer 2019
- Upper Columbia Academy Job Shadow Mentor April 20, 2018
- Gonzaga GEL Weekend Lecture: *Einstein's Special Relativity* April 14, 2018
- Nuclear Physics DC Day Participant, Washington DC April 9, 2018
- Liberty High School Senior Project Mentor, Spokane WA Fall 2017
- Nuclear Physics DC Day Participant, Washington DC May 22, 2017
- Gonzaga GEL Weekend Lecture: *How Nuclear Science Impacts Medicine* April 8, 2017

- Gonzaga Faculty Neighborhood Cafe: *Secrets of the Atomic Nucleus* April 23, 2016
- Joint Physics Graduate Organization & Women and Minorities July 22, 2015
in Physics Seminar, Michigan State University: *From Graduate School to College: Pursing a Career at a Primarily Undergraduate Institution*
- Nuclear Physics DC Day Participant, Washington DC May 6, 2013

Professional and Community

- Murdock College Science Research Conference November 10 & 11, 2023
Student Talk and Poster Judge, Forest Grove OR
- Murdock College Science Research Conference November 8 & 9, 2019
Student Talk and Poster Judge, Vancouver WA
- Nuclear Physics DC Day Participant, Washington DC March 11, 2019
- Logan Community Family Dinner Volunteer January 8, 2019
- Council on Undergraduate Research Posters on the Hill Reviewer 2019
- Upper Columbia Academy Job Shadow Mentor April 20, 2018
- Gonzaga GEL Weekend Lecture: *Einstein's Special Relativity* April 14, 2018
- Nuclear Physics DC Day Participant, Washington DC April 9, 2018
- Liberty High School Senior Project Mentor, Spokane WA Fall 2017
- Nuclear Physics DC Day Participant, Washington DC May 22, 2017
- Gonzaga GEL Weekend Lecture: *How Nuclear Science Impacts Medicine* April 8, 2017
- Gonzaga Faculty Neighborhood Cafe: *Secrets of the Atomic Nucleus* April 23, 2016
- Joint Physics Graduate Organization & Women and Minorities July 22, 2015
in Physics Seminar, Michigan State University: *From Graduate School to College: Pursing a Career at a Primarily Undergraduate Institution*
- Nuclear Physics DC Day Participant, Washington DC May 6, 2013

Gonzaga University

- Provost Faculty Advisory Group 2023 to Present
- Mechanical Engineering Department Tenure Track Search Comm. 2023
- Speaker Series Comm. 2022 to Present
- College of Arts and Sciences Curriculum Comm. Fall 2022 to Present
- Academic Affairs Strategic Planning Group Faculty Rep. 2019 to 2021
- College of Arts and Sciences Curriculum Comm. Fall 2020
- Faculty Handbook Reading Committee Faculty Senate Rep. 2019 to 2020
- Center for Teaching & Advising Lunch and Learn OER Panelist November 20, 2019
- Mission Priority Examen Peer Review Process Participant February 27, 2019
- Faculty Senate Physics Department Rep. 2018 to 2020
- ΦBK Faculty Advisory Comm. 2018 to Present
- Research Council, Faculty Rep. 2018 to 2019
- Academic Technology Advisory Council Faculty Rep. 2017 to Present
- Physics Department Non-Tenure Track Reappointment Comm. 2017 to Present
- Physics Department Non-Tenure Track Search Comm. 2017 to 2018
- Physics Department Tenure Track Search Comm. 2017 to 2018
- Gonzaga University Radiation Safety Officer 2016 to Present
- Admissions Faculty Outreach 2016 to Present
- Physics Journal Club Initiator and Faculty Moderator 2015 to Present
- Physics Department Drop-In Tutoring Center Faculty Tutor 2015 to Present
- Society of Physics Students Faculty Moderator 2015 to 2017

Michigan State University

- NSCL Tour Guide 2010 to 2014
- Graduate Student and REU Student Mentor 2011 to 2014
- Graduate Recruitment Committee Rep. 2012 to 2014
- Sub-Committee on Revisions to Graduate Curriculum Rep. 2012 to 2013
- NSCL/FRIB Open House Volunteer April 20, 2013
- REU Student Mentor 2011 to 2012
- NSCL Seminar Committee Rep. 2011 to 2012
- NSCL Outreach Committee Rep. 2010 to 2011
- Physics of Atomic Nuclei (PAN) Program Volunteer 2009 to 2011

AFFILIATIONS & MEMBERSHIPS

Active-Target Time-Projection Chamber (AT-TPC) Collaboration
 Advanced Laboratory Physics Association (ALPhA)
 American Association of Physics Teachers (AAPT)
 American Physical Society (APS)
 Council on Undergraduate Research (CUR)
 Joint Institute for Nuclear Astrophysics Center for the Evolution of the Elements (JINA-CEE)
 Pacific Northwest Association for College Physics (PNACP)

COMPUTER SKILLS

Software

Geant4
 \LaTeX
 Mathematica
 ROOT

Programming

C++
 Fortran
 Python
 UNIX shell scripting
 Wolfram

Operating Systems

Apple OS X/macOS
 Linux/UNIX Systems
 Microsoft Windows

COURSES TAUGHT

Gonzaga University

Physics I & II, Lecture and Lab
 Scientific Inquiry, Lecture and Lab
 General Physics II Lab
 Electronics
 Computational Physics
 Modern Physics
 Modern Physics Laboratory
 Intermediate Laboratory
 Electricity and Magnetism
 Nuclear and Particle Physics
 Solid State Physics
 FYS: Social Justice in Science Fiction
 CIS: Technology, Culture, and Society

The College of Wooster

Algebra Physics II, Lecture and Lab
 Modern Physics
 Electronics, Lecture and Lab
 Nuclear Physics

UNDERGRADUATE RESEARCH STUDENTS	Pierce Thompson	Fall 2023
	<ul style="list-style-type: none"> • <i>Understanding Nucleosynthesis in Stars by Measuring Reaction Rates in Lab</i> - Gave oral presentation at the 32nd Annual Murdock College Science Research Program on November 11, 2023 	
GONZAGA STUDENTS UNLESS OTHERWISE NOTED	- Gave oral presentation at the 2023 Fall Meeting of APS DNP and JPS on December 1, 2023	
	Sean Pierce, Pierce Thompson, Binyu Tony Yang, and Kiyah Young-Wilson	Summer 2023
	<ul style="list-style-type: none"> • <i>Understanding Nucleosynthesis in Stars by Measuring Reaction Rates in Lab</i> - Presented poster at the Undergraduate Research Showcase during 2023 Gonzaga Fall Family Weekend 	
	Megan Hill and Pierce Thompson	Spring 2023
	<ul style="list-style-type: none"> • <i>Nuclear Reaction Analysis of Stellar Nucleosynthesis Processes</i> - Megan Hill presented poster at the APS Conference for Undergraduate Women in Physics at the University of Washington on January 21, 2023 	
	Matthew Bair, Megan Hill, and Pierce Thompson	Fall 2022
	<ul style="list-style-type: none"> • <i>Nuclear Reaction Analysis of Stellar Nucleosynthesis Processes</i> - Matthew Bair and Pierce Thompson presented poster at the 31st Annual Murdock College Science Research Program on November 12, 2022 	
	Matthew Bair and Pierce Thompson	Summer 2022
	<ul style="list-style-type: none"> • <i>Nuclear Reaction Analysis of Stellar Nucleosynthesis Processes</i> - Presented poster at the Undergraduate Research Showcase during 2022 Gonzaga Fall Family Weekend 	
	Sam Carryer, Ohio University	Spring 2022
	<ul style="list-style-type: none"> • Senior Thesis: <i>Nuclear Level Density Determinations via $^{12}\text{C} + ^{27}\text{Al}$ Proton Evaporation Spectra</i> - Presented poster at APS April Meeting 2022 	
	Austin Rambo	Summer 2021
	<ul style="list-style-type: none"> • <i>Gamma Ray Detection and Time Projection Chamber Simulations Using Geant4</i> - Presented poster at the Undergraduate Research Showcase during 2021 Gonzaga Fall Family Weekend 	
	Ethan Bailes and Matthew Bair	Summer 2021
	<ul style="list-style-type: none"> • <i>Proton Energy Dampening Framework</i> - Presented poster at Gonzaga ZagFam Weekend 2021 - Matthew Bair gave oral presentation titled “Proton Energy Dampening Framework (PEDF) for a Time Projection Chamber” at the 30th Annual Murdock College Science Research Program on November 13, 2021 	
	Andrea Bracamonte and Lauren Fisher	Summer 2020
	<ul style="list-style-type: none"> • <i>Gamma Ray Detector Simulation Using Geant4</i> - Presented poster at the Undergraduate Research Showcase during 2020 Gonzaga Fall Family Weekend - Presented poster at 2020 Fall Meeting of APS DNP 	
	Nathan Magrogan and Brennan Watkins	Summer 2019
	<ul style="list-style-type: none"> • <i>Gamma Ray Spectroscopy Simulations with Geant4</i> - Presented poster at the Undergraduate Research Showcase during 2019 Gonzaga Fall Family Weekend and at the Fall 2019 WA-AAPT Meeting 	

- Andrew Clusserath and Bryce Makela Summer 2018
- *Monte Carlo Simulations of Nuclear Isomer Gamma Emission in Geant4*
 - *Detector Construction for Measuring Nuclear Isomer Gamma Emission in Geant4*
 - Presented posters at the Undergraduate Research Showcase during 2018 Gonzaga Fall Family Weekend
- Henry Thurston Summer 2017
- *3-Body Nuclear Kinematic Modeling*
 - Presented poster at 2017 Fall Meeting of APS DNP, October 26, 2017
 - *Finding a Relation Between Galactic Redshift and Radial Distance*
 - Presented talk at 2017 Pacific Northwest Mathematical Association of America
 - Presented posters on both projects at the Undergraduate Research Showcase during 2017 Gonzaga Fall Family Weekend
- Joey Gutierrez and Jourden Simmons Summer 2016
- *Monte Carlo Acceptance Simulations for the Prototype AT-TPC*
 - Presented poster at 2016 Fall Meeting of APS DNP, October 14, 2016 and at Murdock College Science Research Conference, November 4, 2016
- Michael Wolff, College of Wooster Spring & Summer 2015
- Sophomore Research Assistant Project, Spring: *Calculations for Resonant α Scattering of He Isotopes*
 - Sophomore Research Assistant Project, Summer: *Measurement of Gain and Drift Velocity of the Prototype AT-TPC*
 - Presented summer poster at 2015 Fall Meeting of APS DNP, October 29, 2015
- Nicolae Istrate, College of Wooster 2014 to 2015
- Senior Thesis with Honors: *Theoretical Resonance Calculations for the Isobaric Analogs ^{133}Sn and ^{133}Sb*
 - Presented poster at Senior Research Symposium, April 24, 2015
- Min Sung Kim, College of Wooster 2014 to 2015
- Senior Thesis: *Stopping Power Analysis of ^{37}K , ^{44}Cl , and ^{71}Br Incident on a He:CO₂ (9:1) Gas Target*
 - Presented poster at Senior Research Symposium, April 24, 2015
- Johanna Malaer, College of Wooster Spring 2015
- Junior Thesis: *Strong Gravitational Lensing and The Shell Theorem*
 - Presented talk at Junior Independent Study Physics Colloquium, April 28, 2015
- Diego Miramontes Delgado, College of Wooster Spring 2015
- Junior Thesis: *Binding Energy Changes in Big Bang Nucleosynthesis and their effect on the Shape of the Universe*
 - Presented talk at Junior Independent Study Physics Colloquium, April 28, 2015
- Michael Bush, College of Wooster Fall 2014
- Junior Thesis: *Impact of the Gravitational Force on Star Formation*
 - Presented talk at Junior Independent Study Physics Colloquium, Dec. 2, 2014

PEER-REVIEWED
PUBLICATIONSUNDERLINE DENOTES
UNDERGRADUATE
RESEARCH STUDENT

23. B Hackett, R deBoer, Y Efremenko, M Febbraro, J Nattress, D Bardayan, C Boomer-shine, K Brandenburg, S Dede, J Derkin, R Fang, **A Fritsch**, A Gula, G Gyürky, G Hamad, Y Jones-Alberty, B Kelmar, K Manukyan, M Matney, J McDonough, S Moylan, P O'Malley, S Shahina, N Singh, "[Light Response of Poly\(ethylene 2,6-naphthalate\) to Neutrons](#)," submitted May 2022.
22. RJ deBoer, M Febbraro, DW Bardayan, C Boomershine, K Brandenburg, C Brune, S Coil, M Couder, J Derkin, S Dede, F Fang, **A Fritsch**, A Gula, Gy Gyürky, B Hackett, G Hamad, Y Jones-Alberty, R Kelmar, K Manukyan, M Matney, J McDonough, Z Meisel, S Moylan, J Nattress, D Odell, P O'Malley, MW Paris, D Robertson, Shahina, N Singh, K Smith, MS Smith, E Stech, W Tan, M Wiescher, "[Measurement of the \$^{13}\text{C}\(\alpha, n_0\)^{16}\text{O}\$ Differential Cross Section from 0.8 to 6.5 MeV](#)," *Phys. Rev. Lett.* **132**, 062702 (2024).
21. EC Pollacco, GF Grinyer, F Abu-Nimeh, T Ahn, S Anvar, A Arokiaraj, Y Ayyad, H Baba, M Babo, P Baron, D Bazin, S Beceiro-Novo, C Belkhiria, M Blaizot, B Blank, J Bradt, G Cardella, L Carpenter, S Ceruti, E De Filippo, E Delagnes, S De Luca, H De Witte, F Druillole, B Duclos, F Favela, **A Fritsch**, J Giovinazzo, C Gueye, T Isobe, P Hellmuth, C Huss, B Lachacinski, AT Laffoley, G Lebertre, L Legeard, WG Lynch, T Marchi, L Martina, C Maugeais, W Mittig, L Nalpas, EV Pagano, J Pancin, O Poleshchuk, JL Pedroza, J Pibernat, S Primault, R Raabe, B Raine, A Re-bii, M Renaud, T Roger, P Roussel-Chomaz, P Russotto, G Saccà, F Saillant, P Sizun, D Suzuki, JA Swartz, A Tizon, A Trifiró, N Usher, G Wittwer, JC Yang, "[GET: A generic electronics system for TPCs and nuclear physics instrumentation](#)," *NIM A*, 887, 81-93 (2018).
20. D Bazin, J Bradt, Y Ayyad, W Mittig, T Ahn, S Beceiro-Novo, L Carpenter, M Cortesi, **A Fritsch**, JJ Kolata, W Lynch, N Watwood, "[The Active Target Time Projection Chamber at NSCL](#)," *EPJ Web of Conferences* **163**, 00004 (2017).
19. **A Fritsch**, Y Ayyad, D Bazin, S Beceiro-Novo, J Bradt, L Carpenter, M Cortesi, W Mittig, D Suzuki, T Ahn, JJ Kolata, AM Howard, FD Becchetti, M Wolff, "[Search for \$\alpha\$ -Cluster Structure in Exotic Nuclei with the Prototype Active-Target Time-Projection Chamber](#)," *JPS Conf. Proc.* **14**, 021105 (2017).
18. D Suzuki, T Ahn, D Bazin, FD Becchetti, S Beceiro-Novo, **A Fritsch**, JJ Kolata, W Mittig, for the AT-TPC Collaboration, "[Cluster structure of neutron-rich \$^{10}\text{Be}\$ and \$^{14}\text{C}\$ via resonant alpha scattering](#)," *Il Nuovo Cimento* **39 C**, 372 (2017).
17. JJ Kolata, AM Howard, W Mittig, T Ahn, D Bazin, FD Becchetti, S Beceiro-Novo, Z Chajacki, M Febbraro, **A Fritsch**, WG Lynch, A Roberts, A Shore, RO Torres-Isea, "[Fusion studies with low-intensity radioactive ion beams using an active-target time projection chamber](#)," *NIM A*, 830, 82-87 (2016).
16. T Ahn, DW Bardayan, D Bazin, S Beceiro Novo, FD Becchetti, J Bradt, M Brodeur, L Carpenter, Z Chajacki, M Cortesi, **A Fritsch**, MR Hall, O Hall, L Jensen, JJ Kolata, WG Lynch, W Mittig, P O'Malley, D Suzuki, "[The Prototype Active-Target Time-Projection Chamber used with *TwinSol* Radioactive-Ion Beams](#)," *NIM B*, 376, 321-325 (2016).
15. **A Fritsch**, S Beceiro-Novo, D Suzuki, W Mittig, JJ Kolata, T Ahn, D Bazin, FD Becchetti, B Bucher, Z Chajacki, X Fang, M Febbraro, AM Howard, Y Kanada-En'yo, WG Lynch, AJ Mitchell, M Ojaruega, AM Rogers, A Shore, T Suhara, XD Tang, R Torres-Isea, H Wang, "[One-dimensionality in atomic nuclei: a candidate for linear-chain \$\alpha\$ clustering in \$^{14}\text{C}\$](#) ," *Phys. Rev. C* **93**, 014321 (2016).
14. W Mittig, S Becerio, **A Fritsch**, F Abu-Nimeh, D Bazin, T Ahn, WG Lynch, F Montes, A Shore, D Suzuki, N Usher, J Yurkon, JJ Kolata, A Howard, AL Roberts, XD Tang, FD Becchetti, "[Active Target Detectors for Studies with Exotic Beams: Present and Next Future](#)," *NIM A*, 784, 494-498 (2015).

13. D Suzuki, A Shore, W Mittig, JJ Kolata, D Bazin, M Ford, T Ahn, FD Becchetti, S Beceiro Novo, D Ben Ali, B Bucher, J Browne, X Fang, M Febraro, **A Fritsch**, E Galyaev, AM Howard, N Keeley, WG Lynch, M Ojaruega, AL Roberts, XD Tang, “Resonant α scattering of ${}^6\text{He}$: Limits of clustering in ${}^{10}\text{Be}$,” *Phys. Rev. C* **87**, 054301 (2013).
12. D Suzuki, M Ford, D Bazin, W Mittig, WG Lynch, T Ahn, S Aune, E Galyaev, **A Fritsch**, J Gilbert, F Montes, A Shore, J Yurkon, JJ Kolata, J Browne, A Howard, AL Roberts, XD Tang, “Prototype AT-TPC: Toward a new generation active target time projection chamber for radioactive beam experiments,” *NIM A*, 691, 39-54 (2012).
11. D. Suzuki, D. Bazin, W. Mittig, W.G. Lynch, C. Hewko, A. Roux, D. Ben Ali, J. Browne, E. Galyaev, M. Ford, **A. Fritsch**, J. Gilbert, F. Montes, A. Shore, G. Westfall, J. Yurkon, “Test of a micromegas detector with helium-based gas mixtures for active target time projection chambers utilizing radioactive isotope beams,” *NIM A*, 660 (1), 64-68 (2011).
10. A Schuh, **A Fritsch**, JQ Ginepro, M Heim, A Shore, M Thoennessen, “Discovery of the Silver Isotopes,” *Atomic Data and Nuclear Data Tables*, 96 (5), 531-540 (2010).
9. A Shore, **A Fritsch**, M Heim, A Schuh, M Thoennessen, “Discovery of the Vanadium Isotopes,” *Atomic Data and Nuclear Data Tables*, 96 (4), 351-357 (2010).
8. M Heim, **A Fritsch**, A Schuh, A Shore, M Thoennessen, “Discovery of the Krypton Isotopes,” *Atomic Data and Nuclear Data Tables*, 96 (4), 333-340 (2010).
7. **A Fritsch**, JQ Ginepro, M Heim, A Schuh, A Shore, M Thoennessen, “Discovery of the Tungsten Isotopes,” *Atomic Data and Nuclear Data Tables*, 96 (3), 315-322 (2010).
6. A Schuh, **A Fritsch**, JQ Ginepro, M Heim, A Shore, M Thoennessen, “Discovery of the Gold Isotopes,” *Atomic Data and Nuclear Data Tables*, 96 (3), 307-314 (2010).
5. A Shore, **A Fritsch**, M Heim, A Schuh, M Thoennessen, “Discovery of the Arsenic Isotopes,” *Atomic Data and Nuclear Data Tables*, 96 (3), 299-306 (2010).
4. A Schuh, **A Fritsch**, M Heim, A Shore, M Thoennessen, “Discovery of the Iron Isotopes,” *Atomic Data and Nuclear Data Tables*, 96 (6), 817-823 (2010).
3. A Shore, **A Fritsch**, JQ Ginepro, M Heim, A Schuh, M Thoennessen, “Discovery of the Barium Isotopes,” *Atomic Data and Nuclear Data Tables*, 96 (6), 749-758 (2010).
2. G Christian, WA Peters, D Absalon, D Albertson, T Baumann, D Bazin, E Breitbart, J Brown, PL Cole, D Denby, PA DeYoung, JE Finck, H Frank, **A Fritsch**, C Hall, AM Hayes, J Hinnefeld, CR Hoffman, R Howes, B Luther, E Mosby, S Mosby, D Padilla, PV Pancella, G Peaslee, WF Rogers, A Schiller, MJ Strongman, M Thoennessen, LO Wagner, “Production of Nuclei in Neutron Unbound States via Primary Fragmentation of ${}^{48}\text{Ca}$,” *Nucl. Phys. A* **801** 101 (2008).
1. JJ Kolata, H Amro, FD Becchetti, JA Brown, PA DeYoung, M Hencheck, JD Hinnefeld, GF Peaslee, **AL Fritsch**, C Hall, U Khadka, PJ Mears, P O’Rourke, D Padilla, J Rieth, T Spencer, T Williams, “Breakup of ${}^6\text{He}$ Incident on ${}^{209}\text{Bi}$ Near the Coulomb Barrier,” *Phys. Rev. C* **75**, 031302(R) (2007).

SEMINARS &
CONFERENCE
PRESENTATIONS

UNDERLINE DENOTES
UNDERGRADUATE
RESEARCH STUDENT

34. A Fritsch, November 29, 2023. *Level Density Studies via Proton Evaporation*, Sixth Joint Meeting of the Nuclear Physics Divisions of the American Physical Society and the Physical Society of Japan, Hilton Waikoloa Village, HI.
33. A Fritsch, January 25, 2022. **Invited seminar.** *Nuclear Structure Studies with Time Projection Chambers and Gamma Detectors*, Institute of Nuclear and Particle Physics (INPP) Seminar, Ohio University, Athens, OH.
32. A Fritsch, December 2, 2021. **Invited seminar.** *Active Targets, Time Projection Chambers, and Beam Species Identification*, PHYS7501 Guest Lecture, Ohio University, Athens, OH.
31. A Fritsch, November 9, 2021. **Invited seminar.** *Nuclear Structure and Nuclear Astrophysics*, Physics Colloquium, Wabash College, Crawfordsville, IN.
30. A Fritsch, J Brown, A Clusserath, B Makela, May 18, 2019. *Geant4 Simulations of Nuclear Isomer Gamma Emission Detection*, 20th Annual Meeting of the APS Northwest Section, Western Washington University, Bellingham, WA.
29. A Fritsch, March 5, 2019. **Invited seminar.** *Nuclear Structure: α -Clustering and Gamma Emission Detection*, Physics Colloquium, Eastern Washington University, Cheney, WA.
28. A Fritsch, J Brown, A Clusserath, B Makela, October 27, 2018. *Geant4 Simulations of Nuclear Isomer Gamma Emission Detection*, Fifth Joint Meeting of the Nuclear Physics Divisions of the American Physical Society and the Physical Society of Japan, Hilton Waikoloa Village, HI.
27. A Fritsch, M Cortesi, W Mittig, October 26, 2017. *Multi-layer Thick Gas Electron Multiplier (M-THGEM) Simulations at Low Pressure for High-Gain Operation*, 2017 Fall Meeting of the American Physical Society Division of Nuclear Physics, Pittsburgh, PA.
26. A Fritsch, February 1, 2017. **Invited seminar.** *Search for α -cluster Structure in Exotic Nuclei with the Prototype AT-TPC*, Reed College, Portland, OR.
25. A Fritsch, June 27, 2016. **Invited seminar.** *Studies in α -Cluster Structure with the Active Target-Time Projection Chamber (AT-TPC)*, Hokkaido University, Sapporo, Japan.
24. A Fritsch, June 21, 2016. Poster: *Search for α -Cluster Structure in Exotic Nuclei with the Prototype Active Target Time Projection Chamber*. Nuclei in the Cosmos XIV, Niigata, Japan. **Symposium Best Poster Award Winner.**
23. A Fritsch, April 23, 2016. *Secrets of the Atomic Nucleus*, Gonzaga Faculty Neighborhood Cafe, Gonzaga University, Spokane, WA.
22. A Fritsch, Y Ayyad, D Bazin, S Beceiro-Novo, J Bradt, L Carpenter, M Cortesi, W Mittig, D Suzuki, T Ahn, AM Howard, JJ Kolata, FD Becchetti, April 17, 2016. *Search for α -Cluster Structure in Exotic Nuclei with the Prototype Active-Target Time-Projection Chamber*, 2016 American Physical Society April Meeting, Salt Lake City, UT.
21. A Fritsch, Y Ayyad, D Bazin, S Beceiro-Novo, J Bradt, W Mittig, T Ahn, A. Howard, JJ Kolata, F Becchetti, M Wolff, October 29, 2015. *3-Body Decay of Cluster States in ^{14}C* , 2015 Fall Meeting of the American Physical Society Division of Nuclear Physics, Santa Fe, NM.
20. A Fritsch, July 22, 2015. *From Graduate School to College: Pursing a Career at a Primarily Undergraduate Institution*, Joint Physics Graduate Organization & Women and Minorities in Physics Seminar, Michigan State University, East Lansing, MI.
19. A Fritsch, May 19, 2015. *One-dimensional alignment of α particles in atomic nuclei*, Active Targets & Time Projection Chambers for Nuclear Physics Experiments Workshop, National Superconducting Cyclotron Laboratory, East Lansing, MI.

18. A Fritsch, March 20, 2015. **Invited seminar.** *One-dimensional alignment of α particles in atomic nuclei*, Physics Colloquium Series, Kenyon College, Gambier, OH.
17. A Fritsch, March 17, 2015. **Invited seminar.** *One-dimensional alignment of α particles in atomic nuclei*, Gonzaga University, Spokane, WA.
16. A Fritsch, February 12, 2015. **Invited seminar.** *One-dimensional alignment of α particles in atomic nuclei*, University of Dallas, Irving, TX.
15. A Fritsch, December 15, 2014. **Invited seminar.** *One-dimensional alignment in atomic nuclei*, University of Scranton, Scranton, PA.
14. A Fritsch, October 16, 2014. **Invited seminar.** *Nuclear Alpha Clustering & Statistics on Students in Physics*, Physics Colloquium Series 2014-2015, The College of Wooster, Wooster, OH.
13. A Fritsch, S Beceiro-Novo, D Suzuki, W Mittig, T Ahn, D Bazin, Z Chajecki, W Lynch, A Shore, J Kolata, A Howard, A Roberts, X Tang, F Becchetti, October 11, 2014. *Search for Cluster Structure in ^{14}C by Investigation of $^{10}\text{Be} + ^4\text{He}$ Resonant Scattering with the Prototype AT-TPC*, Fourth Joint Meeting of the Nuclear Physics Divisions of the American Physical Society and the Physical Society of Japan, Hilton Waikoloa Village, HI.
12. A Fritsch, May 7, 2014. *How can clicker questions be implemented in a lecture for improved learning in Modern Physics?* Future Academic Scholars in Teaching (FAST) Fellowship Program Symposium, Michigan State University, East Lansing, MI.
11. A Fritsch, March 24, 2014. *The Search for Cluster Structure in ^{14}C with the Prototype AT-TPC*, NSCL, Graduate Student Seminar, National Superconducting Cyclotron Laboratory, East Lansing, MI.
10. A Fritsch, March 20, 2014. **Invited seminar.** *The Search for Cluster Structure in ^{14}C with the Prototype AT-TPC*, NSCL Research Discussion Seminar, National Superconducting Cyclotron Laboratory, East Lansing, MI.
9. A Fritsch, March 4, 2014. **Invited seminar.** *Pushing the Envelope of Science: Exploring Nature on the Nuclear Scale*, Wabash College, Crawfordsville, IN.
8. A Fritsch, February 24, 2014. **Invited seminar.** *Pushing the Envelope of Science: Exploring Nature on the Nuclear Scale*, The College of Wooster, Wooster, OH.
7. A Fritsch, D Suzuki, W Mittig, T Ahn, D Bazin, F Becchetti, Z Chajecki, J Kolata, A Howard, W Lynch, A Roberts, A Shore, X Tang, October 24, 2013. *Search for Cluster Structure in ^{14}C by Investigation of $\alpha(^{10}\text{Be}, ^{10}\text{Be}^*)\alpha'$ Scattering with the Prototype AT-TPC*, 2013 Fall Meeting of the American Physical Society Division of Nuclear Physics, Newport News, VA.
6. A Fritsch, M Heim, T Baumann, S Mosby, A Spyrou, M Thoennessen, January 30, 2009. Poster: *Geant4 Simulation of MoNA*. Celebration of Student Research, Wabash College.
5. A Fritsch, S Krutz, T Pizarek, M Madsen, January 30, 2009. Poster: *Band Gap Energies of Silicon and Germanium*. Celebration of Student Research, Wabash College.
4. A Fritsch, M Heim, T Baumann, S Mosby, A Spyrou, M Thoennessen, October 24, 2008. Poster: *Geant4 Simulation of MoNA*. 2008 Annual Fall Meeting of the American Physical Society Division of Nuclear Physics, Conference Experience for Undergraduates (CEU) Poster Session, Oakland, California.
3. A Fritsch, September 24, 2008. *MoNA: The Modular Neutron Array*. Wabash College Physics Colloquium.

2. A Fritsch, T Pizarek, K Prifogle, S Shrestha, M Madsen, January 26, 2007. Poster: *The Circular Motion of an Electron Beam in Real Helmholtz Coils*. Celebration of Student Research, Wabash College.
1. A Fritsch, P O'Rourke, J Brown, for the MoNA Collaboration.; January 26, 2007. Poster: *Nuclear Physics at the National Superconducting Cyclotron Laboratory (NSCL) with the Modular Neutron Array (MoNA)*. Celebration of Student Research, Wabash College.