

Andrew W. Jackura

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Curriculum Vitae

Date – August 30, 2023



WILLIAM & MARY
CHARTERED 1693

Education

Doctor of Philosophy <i>Major: Physics</i> Indiana University	May 2019
<ul style="list-style-type: none">Dissertation – <i>Studies in Multiparticle Scattering Theory</i> pdfAdvisor – Prof. Adam P. Szczepaniak	
Master of Science <i>Major: Physics</i> Indiana University	May 2017
Bachelor of Science <i>Major: Physics</i> Purdue University Northwest	May 2013
Bachelor of Science <i>Major: Mechanical Engineering, Minor: Applied Mathematics</i> Purdue University Northwest	May 2011
<ul style="list-style-type: none">Senior Design – <i>Design of a Solar Thermal Water Heating System</i>	

Professional Experience

Academic Appointments

Assistant Professor The College of William & Mary – Physics Department	Aug 2023 – present
Postdoctoral Scholar The University of California, Berkeley – Physics Department	Feb 2023 – Aug 2023
Adjunct Associate Professor Old Dominion University – Physics Department	Aug 2022 – Aug 2023
Postdoctoral Fellow Old Dominion University – Physics Department	Jun 2019 – Feb 2023

Non-Academic Positions

Nuclear Engineering Associate (Special Term Appointment) Argonne National Laboratory – Nuclear Science and Engineering Division	Jan 2013 – Jan 2014
Research Aide Argonne National Laboratory – Nuclear Science and Engineering Division	Aug 2012 – Jan 2013

Teaching & Research Assistantships

Research Associate Indiana University – Department of Physics	Jan 2014 – May 2019
Assistant Instructor Indiana University – Department of Physics	Aug 2017 – Dec 2017 also Aug-Dec 2015, Aug-Dec 2013
Intern (Student Research Program) Argonne National Laboratory – Nuclear Science and Engineering Division	May 2012 – Aug 2012
Limited-Term Lecturer Purdue University Northwest – Department of Chemistry and Physics	Jun 2011 – May 2013
Teaching Assistant Purdue University Northwest – Mechanical & Civil Engineering Department	Jan 2010 – Dec 2010
Supplemental Instructor Academic Resource Center, Purdue University Northwest	Aug 2009 – Sep 2011

Affiliations

Member of the American Physical Society

Affiliated Positions

Thomas Jefferson National Accelerator Facility Aug 2023 – present
Theory Division

Affiliated Scientist Feb 2023 – present
Lawrence Berkeley National Laboratory – Nuclear Science Division, Nuclear Theory

Collaborations

Exotic Hadron (ExoHad) Collaboration 2023 – present
Full member

Nuclear Reactions Group (NRG) 2023 – present
Founding member

Hadron Spectrum (HadSpec) Collaboration 2019 – present
Full member

COMPASS 2015 – 2019
Affiliated member

Joint Physics Analysis Center (JPAC) 2013 – present
Affiliated member, former Full member

Honors & Awards

The 2021 Jefferson Science Associates Postdoctoral Prize 2021
Annual award for postdoctoral researchers with a prize of a \$10,000 grant for research activities.

Konopinski Dissertation Award Spring 2019
Dissertation award for Ph.D. students in Physics at Indiana University.

Outstanding Graduate Student in Research Award Spring 2019
Awarded to graduate students in physics for excellence in research.

The Professor Brian D. Serot Fellowship Fall 2018
Fellowship support for Ph.D. students studying theoretical nuclear physics.

JSA Junior Scientist Travel Award 2017, 2018, and 2019
Travel stipends from the Jefferson Science Associates.

Teaching & Mentoring

University Courses

— William & Mary —

General Physics I - Problem Session Fall 2023
PHYS 101P - Weekly one-hour problem session for an introductory calculus-based course on mechanics and wave-motion.

— Old Dominion University —

University Physics I Fall 2022
PHYS 226/231/261 - Introductory calculus-based course on mechanics and wave-motion

— Indiana University —

Physics 2 - Discussion Spring 2017
P222 - Introductory calculus-based course on electromagnetism and optics also Spring 2015

General Physics 1 - Laboratory Fall 2013
P201 - Introductory algebra-based course on mechanics, wave-motion, and thermodynamics

— Purdue University Northwest —

Heat, Electricity and Optics - Laboratory

PHYS 25100 - Introductory calculus-based course on thermodynamics, electromagnetism, and optics

Spring 2013

also S/F 2011, F 2012

General Physics I - Laboratory

PHYS 22000 - Introductory algebra-based course on mechanics, wave-motion, and thermodynamics

Spring 2012

Mechanics - Laboratory

PHYS 15200 - Introductory calculus-based course on mechanics and wave motion

Summer 2011

Mentoring

— Student Supervision —

Tess Messerer [University of California, Berkeley]

N3AS undergraduate research program,

Topic: *Nuclear Reaction Theory*

2023

Adriana Baniecki

High-school student who continued research after the 2021 REYES Mentor Program.

Now an undergraduate student at Notre Dame.

2021 – 2023

Taylor Powell [Old Dominion University]

Jefferson Lab REU program. Now a Ph.D. student at William & Mary.

Topic: *Solving Relativistic Three-Body Integral Equations in the Presence of Bound States and Resonances*

w/ Raúl Briceño

2021 – 2022

Ajah Harris [James Madison University]

Jefferson Lab REU program.

Topic: *Studying n -Body Subatomic Reactions using LQCD*

w/ Raúl Briceño

Summer 2021

Kevin Saldaña [California State University, Bakersfield]

Indiana University REU Program. Now a Ph.D. student at Indiana University.

Topic: *One Particle Exchange Models in Three Body Scattering*

w/ Adam Szczepaniak

Summer 2018

— Outreach Programs —

Nuclear Physics Mentor Program

Online mentorship program through the Remote Experience for Young Engineers and Scientists,

included 180 students ranging from high school to graduate school educations.

Summer 2023

also 2021, 2022

Engineering Summer Program

Instructor & Group Leader for Purdue University Northwest

Three week program for local middle- and high-school students.

Summer 2011

also Summer 2010

Publications

Citation count (according to inspirehep.net) as of August 30, 2023:

853 total citations to 29 published papers at an average of 30 cites/paper. h -index of 16.

Refereed Journal Publications

“Prospects for $\gamma^*\gamma^* \rightarrow \pi\pi$ via lattice QCD”

R. A. Briceño, A. W. Jackura, A. Rodas, and J. V. Guerrero

Phys. Rev. D **107**, 034504 (2023) [📄](#) pdf

“Three-body scattering and quantization conditions from S-matrix unitarity”

A. W. Jackura

Phys. Rev. D **108**, 034505 (2023) [📄](#) pdf

“Two-current transition amplitudes with two-body final states”

K. H. Sherman, F. G. Ortega-Gama, R. A. Briceño, and A. W. Jackura

Phys. Rev. D **105**, 114510 (2022) [📄](#) pdf

“On-shell representations of two-body transition amplitudes: Single external current”

R. A. Briceño, A. W. Jackura, F. G. Ortega-Gama, and K. H. Sherman

Phys. Rev. D **103**, 114512 (2021) [↗](#) pdf

“Solving relativistic three-body integral equations in the presence of bound states”

A. W. Jackura, R. A. Briceño, S. M. Dawid, M. H. E. Islam, and C. McCarty

Phys. Rev. D **104**, 014507 (2021) [↗](#) pdf

“Consistency checks for two-body finite-volume matrix elements: II. Perturbative systems”

R. A. Briceño, M. T. Hansen, and A. W. Jackura

Phys. Rev. D **101**, 094508 (2020) [↗](#) pdf

“Consistency checks for two-body finite-volume matrix elements: Conserved currents and bound states”

R. A. Briceño, M. T. Hansen, and A. W. Jackura

Phys. Rev. D **100**, 114505 (2019) [↗](#) pdf

“Moments of angular distribution and beam asymmetries in $\eta\pi^0$ photoproduction at GlueX”

V. Mathieu, M. Albaladejo, C. Fernández-Ramírez, A. W. Jackura, M. Mikhasenko, A. Pilloni, and A. P. Szczepaniak

Phys. Rev. D **100**, 054017 (2019) [↗](#) pdf

“Equivalence of three-particle scattering formalisms”

A. W. Jackura, S. M. Dawid, C. Fernández-Ramírez, V. Mathieu, M. Mikhasenko, A. Pilloni, S. R. Sharpe, and A. P. Szczepaniak

Phys. Rev. D **100**, 034508 (2019) [↗](#) pdf

“Three-body scattering: Ladders and Resonances”

M. Mikhasenko, Y. Wunderlich, A. Jackura, V. Mathieu, A. Pilloni, B. Ketzer, and A. P. Szczepaniak

JHEP **08**, 080 (2019) [↗](#) pdf

“Interpretation of the LHCb $P_c(4312)^+$ Signal”

C. Fernández-Ramírez, A. Pilloni, M. Albaladejo, A. Jackura, V. Mathieu, M. Mikhasenko, J. A. Silva-Castro, and A. P. Szczepaniak

Phys. Rev. Lett. **123**, 092001 (2019) [↗](#) pdf

“Determination of the pole position of the lightest hybrid meson candidate”

A. Rodas et al.

Phys. Rev. Lett. **122**, 042002 (2019) [↗](#) pdf

“Pole position of the $a_1(1260)$ from τ -decay”

M. Mikhasenko et al.

Phys. Rev. D **98**, 096021 (2018) [↗](#) pdf

“Phenomenology of Relativistic $3 \rightarrow 3$ Reaction Amplitudes within the Isobar Approximation”

A. Jackura, C. Fernández-Ramírez, V. Mathieu, M. Mikhasenko, J. Nys, A. Pilloni, K. Saldaña, N. Sherrill, and A. P. Szczepaniak

Eur. Phys. J. C **79**, 56 (2019) [↗](#) pdf

“Regge phenomenology of the N^* and Δ^* poles”

J. A. Silva-Castro et al.

Phys. Rev. D **99**, 034003 (2019) [↗](#) pdf

“Structure of Pion Photoproduction Amplitudes”

V. Mathieu, J. Nys, C. Fernández-Ramírez, A. N. Hiller Blin, A. Jackura, A. Pilloni, A. P. Szczepaniak, and G. Fox

Phys. Rev. D **98**, 014041 (2018) [↗](#) pdf

“Global analysis of charge exchange meson production at high energies”

J. Nys, A. N. Hiller Blin, V. Mathieu, C. Fernández-Ramírez, A. Jackura, A. Pilloni, J. Ryckebusch, A. P. Szczepaniak, and G. Fox

Phys. Rev. D **98**, 034020 (2018) [↗](#) pdf

“What is the right formalism to search for resonances? II. The pentaquark chain”

A. Pilloni et al.

Eur. Phys. J. C **78**, 727 (2018) [↗](#) pdf

“Khuri–Treiman equations for $\pi\pi$ scattering”

M. Albaladejo, N. Sherrill, C. Fernández-Ramírez, A. Jackura, V. Mathieu, M. Mikhasenko, J. Nys, A. Pilloni, and A. P. Szczepaniak
Eur. Phys. J. C **78**, 574 (2018) [📄](#) pdf

“Vector Meson Photoproduction with a Linearly Polarized Beam”

V. Mathieu, J. Nys, C. Fernández-Ramírez, A. Jackura, A. Pilloni, N. Sherrill, A. P. Szczepaniak, and G. Fox
Phys. Rev. D **97**, 094003 (2018) [📄](#) pdf

“Studying the $P_c(4450)$ resonance in J/ψ photoproduction off protons”

A. N. Hiller Blin, C. Fernández-Ramírez, A. Jackura, V. Mathieu, V. I. Mokeev, A. Pilloni, and A. P. Szczepaniak
Few Body Syst. **59**, 104 (2018) [📄](#) pdf

“What is the right formalism to search for resonances?”

M. Mikhasenko et al.
Eur. Phys. J. C **78**, 229 (2018) [📄](#) pdf

“Features of $\pi\Delta$ Photoproduction at High Energies”

J. Nys et al.
Phys. Lett. B **779**, 77–81 (2018) [📄](#) pdf

“Analyticity Constraints for Hadron Amplitudes: Going High to Heal Low Energy Issues”

V. Mathieu, J. Nys, A. Pilloni, C. Fernández-Ramírez, A. Jackura, M. Mikhasenko, V. Pauk, A. P. Szczepaniak, and G. Fox
EPL **122**, 41001 (2018) [📄](#) pdf

“New analysis of $\eta\pi$ tensor resonances measured at the COMPASS experiment”

A. Jackura et al.
Phys. Lett. B **779**, 464–472 (2018) [📄](#) pdf

“On the η and η' Photoproduction Beam Asymmetry at High Energies”

V. Mathieu, J. Nys, C. Fernández-Ramírez, A. Jackura, M. Mikhasenko, A. Pilloni, A. P. Szczepaniak, and G. Fox
Phys. Lett. B **774**, 362–367 (2017) [📄](#) pdf

“Amplitude analysis and the nature of the $Z_c(3900)$ ”

A. Pilloni, C. Fernández-Ramírez, A. Jackura, V. Mathieu, M. Mikhasenko, J. Nys, and A. P. Szczepaniak
Phys. Lett. B **772**, 200–209 (2017) [📄](#) pdf

“Finite-energy sum rules in eta photoproduction off a nucleon”

J. Nys et al.
Phys. Rev. D **95**, 034014 (2017) [📄](#) pdf

“Studying the $P_c(4450)$ resonance in J/ψ photoproduction off protons”

A. N. Hiller Blin, C. Fernández-Ramírez, A. Jackura, V. Mathieu, V. I. Mokeev, A. Pilloni, and A. P. Szczepaniak
Phys. Rev. D **94**, 034002 (2016) [📄](#) pdf

Reviews & Whitepapers

“Novel approaches in hadron spectroscopy”

M. Albaladejo et al.
Prog. Part. Nucl. Phys. **127**, 103981 (2022) [📄](#) pdf

“Snowmass white paper: Need for amplitude analysis in the discovery of new hadrons”

M. Albaladejo et al.
arXiv:2203.08208 [hep-ph] (Mar. 2022)

“Issues and Opportunities in Exotic Hadrons”

R. A. Briceno et al.
Chin. Phys. C **40**, 042001 (2016) [📄](#) pdf

Conference Proceedings

“Three-pion effects in $K^0 - \bar{K}^0$ mixing”

A. W. Jackura, R. A. Briceño, and M. T. Hansen

PoS **LATTICE2022**, 062 (2023)  pdf

“Connecting Matrix Elements to Multi-Hadron Form-Factors”

A. W. Jackura

PoS **LATTICE2021**, 108 (2022)  pdf

“Matrix Elements of Bound States in a Finite Volume”

A. W. Jackura

PoS **LATTICE2019**, 079 (2019)  pdf

“Tensor resonances in $\eta\pi$ using COMPASS data”

A. Jackura

PoS **Hadron2017**, 035 (2018)  pdf

“Unitarity approach to the mass-dependent fit of 3π resonance production data from the COMPASS experiment”

M. Mikhasenko, A. Jackura, B. Ketzer, and A. Szczepaniak

EPJ Web Conf. **137**, 05017 (2017)  pdf

“Amplitude analysis of resonant production in three pions”

A. Jackura, M. Mikhasenko, and A. Szczepaniak

EPJ Web Conf. **130**, 05008 (2016)  pdf

Research Talks

Invited Talks

— Conferences & Workshops —

“Towards Multi-hadron matrix elements from Lattice QCD”

APS April Meeting 2023, Minneapolis, MN.

Apr 2023

“Few-Body Dynamics from QCD” slides

4th Workshop on Future Directions in Spectroscopy Analysis.

Nov 2022

“JSA Postdoctoral Award Talk – Three-Body Nuclear Phenomena from QCD” slides

2021 Jefferson Lab Users Organization Annual Meeting.

Jun 2021

“Solving relativistic integral equations for three body systems”

“Accessing and Understanding the QCD Spectra”, INT Workshop (virtual)

Aug 2020

“Update on JPAC Activities in Hadron Spectroscopy”

XVI International Workshop on Hadron Structure and Spectroscopy, Aveiro, Portugal

Jun 2019

“Towards an Analytical Description of Three Particle Scattering” slides

8th Workshop of the APS Topical Group on Hadronic Physics, Denver, CO.

Apr 2019

“Dispersive approach to three body scattering” slides

International Workshop on Partial Wave Analyses and Advanced Tools for Hadron Spectroscopy (PWA10/ATHOS5), IHEP, Beijing, China

Jul 2018

“Hadron Spectroscopy and JPAC Activities”

The 84th Annual Meeting of the APS Southeastern Section, Milledgeville, GA.

Nov 2017

— Colloquia —

“From Newton to Nuclei”

Distinguished Speaker Series, Purdue University Northwest, Hammond, IN.

Apr 2023

“Nuclear Reactions & QCD Spectroscopy”

Triangle Nuclear Theory Colloquium, University of North Carolina, Chapel Hill, NC.

Apr 2023

“Nuclear Reactions & QCD Spectroscopy”



Physics Colloquium, Old Dominion University, Norfolk, VA.

Mar 2023




“Nuclear Reactions & QCD Spectroscopy”

Physics Colloquium, William & Mary, Williamsburg, VA.







Mar 2023

- “Exotica: Challenges and Opportunities in Hadron Spectroscopy”** Apr 2022
Physics Colloquium, Old Dominion University, Norfolk, VA. (virtual)
- “Few-Body Dynamics from the Finite-Volume”**  slides,  recordings Feb 2022
Virtual Lattice Field Theory Colloquium Series, MIT, Cambridge, MA. (virtual)

— Seminars —

- “Towards Few-Hadron Matrix Elements from QCD”** Mar 2023
Theory Center seminar, Jefferson Lab, Newport News, VA.
- “Toward Few-Body Nuclear Dynamics from QCD”** Jan 2023
Nuclear Theory seminar, Lawrence Berkeley National Lab, Berkeley, CA.
- “Developments on Multi-Hadron Matrix Elements from Lattice QCD”** Jan 2023
University of California, Berkeley, Berkeley, CA.
- “Few-Body Dynamics from QCD”** Apr 2022
Theory Center seminar, Jefferson Lab, Newport News, VA. (virtual)
- “Few-Body Nuclear Phenomena from Lattice Quantum Chromodynamics”** Oct 2021
Theory seminar, TRIUMF, Vancouver, British Columbia, Canada. (virtual)
- “Three-body nuclear interactions from QCD”**  slides Nov 2020
Nuclear Theory seminar, Lawrence Berkeley National Lab, Berkeley, CA. (virtual)
- “Finite-Volume Matrix Elements of Two-Hadron States”** Oct 2019
Theory seminar, MIT, Cambridge, MA.
- “Finite-volume matrix elements of two hadron-states”**  slides Oct 2019
Theory Center seminar, Jefferson Lab, Newport News, VA.
- “Phenomenology of Three Particle Scattering Amplitudes”** Jan 2019
Nuclear Theory seminar, Argonne National Laboratory, Lemont, IL.
- “Phenomenology of $3 \rightarrow 3$ Scattering”**  slides Oct 2018
Theory Center seminar, Jefferson Lab, Newport News, VA.

— Lectures —

- “Nuclear Reactions – Protons, Neutrons, and Nuclear Binding”** [1 lecture] Aug 2023
REYES Nuclear Physics Mentor Program (virtual)
- “QCD Spectroscopy – An Introduction”** [2 lectures] Jun 2023
Advanced Cyberinfrastructure Training at Rensselaer Polytechnic Institute. (virtual)
- “QCD Spectroscopy – An Introduction”** [2 lectures]  recordings Jul 2022
REYES Nuclear Physics Mentor Program (virtual)
- “Hadron Spectroscopy”** [3 lectures]  recordings Jun 2022
Advanced Cyberinfrastructure Training at Rensselaer Polytechnic Institute. (virtual)
- “Introduction to Nuclear Reactions”** [3 lectures]  recordings Aug 2021
REYES Nuclear Physics Mentor Program (virtual)
- “Hadron Spectroscopy and Resonances”** [4 lectures]  recordings Jun 2021
INT Summer School on Problem Solving in Lattice QCD. (virtual)
w/ Raúl Briceño. Primary duties included creation of numerical exercises,  git repo
- “Introduction to Lattice Field Theory”** [8 lectures] Summer 2020
Informal lectures for graduate students associated with Jefferson Lab. (virtual)
- “Partial Wave Analysis & Resonances”** [2 lectures]  recordings Jul 2017
International Summer School on Reaction Theory, Bloomington, IN.
w/ Marc Vanderhaeghen.
- “Education through Experimentation”** [1 lectures] Aug 2013
ANL Training Course with the Minor Academy of Sciences of Ukraine
w/ Joe Braun. Primary duties included preparation of exercises and lecture material.
- “Exercises in Probabilistic Safety Assessment”** [2 lectures] Oct 2012
IAEA-ANL Training Course on the Safety Assessment of NPPS to Assist Decision Making
w/ Joe Braun. Primary duties included preparation of exercises and lecture material
- “Four (Six) Factor Formula & Neutron Life Cycle”** [1 lecture] Aug 2012
IAEA-ANL Training Course on Leadership & Management for Introducing and Expanding Nuclear Power Programmes
w/ Walt Deitrich and Joe Braun. Primary duties included preparation of exercises and lecture material.

Contributed Talks

- “Towards accessing $\gamma^*\gamma^* \rightarrow \pi\pi$ from lattice QCD”** [slides](#) Apr 2023
10th Workshop of the APS Topical Group on Hadronic Physics, Minneapolis, MN.
- “Few-Body Dynamics from QCD”** [slides](#) Sep 2022
The 9th International Conference on Quarks and Nuclear Physics (QNP2022) (virtual)
- “Few-Body Dynamics from QCD”** [slides](#) Sep 2022
14th Conference on the Intersections of Particle and Nuclear Physics (CIPANP), Lake Buena Vista, FL.
- “Progress in relativistic three-hadron scattering from lattice QCD”** Oct 2021
2021 Fall Meeting of the APS Division of Nuclear Physics, (virtual)
- “Connecting Matrix Elements to Multi-Hadron Form-Factors”** [slides](#) Jul 2021
The 38th International Symposium on Lattice Field Theory, (virtual)
- “Progress in relativistic three-hadron scattering from lattice QCD”** [slides](#) Jul 2021
19th International Conference on Hadron Spectroscopy and Structure (HADRON 2021), (virtual)
- “Integral equations for relativistic three-hadron scattering”** [slides](#) Apr 2021
9th Workshop of the APS Topical Group on Hadronic Physics, (virtual)
- “Finite volume relations for two hadron matrix elements and form factors”** Nov 2020
2020 Fall Meeting of the APS Division of Nuclear Physics, (virtual)
- “Connecting Matrix Elements to Multi-Hadron Form-Factors”** [slides](#) Aug 2020
Asia-Pacific Symposium for Lattice Field Theory (APLAT 2020), (virtual)
- “Matrix Elements of Bound States in a Finite Volume”** [slides](#) Jun 2019
The 37th International Symposium on Lattice Field Theory, Wuhan, China
- “Phenomenology of 3-to-3 Scattering”** [slides](#) May 2018
Scattering from the Lattice: application to phenomenology and beyond, Dublin (Ireland)
- “Dispersive approach to three-particle systems”** [slides](#) Feb 2018
“Multi-Hadron Systems from Lattice QCD”, INT, Seattle, WA
- “Tensor resonances in $\eta\pi$ production at COMPASS”** Nov 2017
2nd Workshop on Future Directions in Spectroscopy Analysis, Mexico City, Mexico
- “Peripheral Production of $\eta\pi$ Resonances”** Oct 2017
Fall Meeting of the APS Division of Nuclear Physics, Pittsburgh, PA
- “Tensor Resonances in $\eta\pi$ Using COMPASS Data”** [slides](#) Sep 2017
XVII International Conference on Hadron Spectroscopy (HADRON 2017), Salamanca, Spain
- “Exotica in Hadron Spectroscopy”** Sep 2017
4th PIKIO Meeting, Lexington, KY
- “Amplitude analysis for diffractive resonance production”** [slides](#) Mar 2017
International Workshop on Partial Wave Analyses and Advanced Tools for Hadron Spectroscopy (PWA9/ATHOS4), Bad Honnef, Germany
- “Phenomenological studies on hadronic reactions and resonances extraction”** Mar 2017
3rd PIKIO Meeting, Bloomington, IN
- “Unitarized amplitudes for diffractive production of three pion resonances”** Feb 2017
7th Workshop of the APS Topical Group on Hadronic Physics, Washington, D.C.
- “Partial wave analysis of 3π with pion and photon beams”** Oct 2016
2016 Fall Meeting of the APS Division of Nuclear Physics, Vancouver, BC, Canada
- “Amplitude analysis of resonant production in three pions”** [slides](#) Jun 2016
14th International Workshop on Meson Production, Properties and Interaction (MESON), Kraków, Poland
- “Amplitude Analysis of Exotic XYZ Quarkonium States”** [slides](#) Sep 2015
XVI International Conference on Hadron Spectroscopy (HADRON 2015), Newport News, VA
- “Amplitude Analysis of Exotic Hadrons”** Sep 2015
XXVIII Midwest Theory Get-Together, Argonne National Laboratory, Lemont, IL

— Posters —

- “**Studies of Exotica and the Global Analysis Efforts at JPAC**” Apr 2018
SURA Board of Trustees Meeting, Jefferson Lab, Newport News, VA.
- “**Partial Wave Analysis of 3π Systems**” Jul 2016
National Nuclear Physics Summer School, MIT, Cambridge MA.
- “**Design of a Remote Lens Cover for Northwest Indiana Robotic Observatory**” Apr 2012
Undergraduate Research Grant Program Exhibition, Purdue University Northwest, Hammond IN.
- “**Design of Flat Field Lamp Using LED Array**” Apr 2012
Undergraduate Research Grant Program Exhibition, Purdue University Northwest, Hammond IN.

— Misc. —

- “**Design of Green Energy Systems and HVAC Laboratory**” May 2010
Presented to the PNW Engineering Board of Advisors, Purdue University Northwest, Hammond, IN.

Professional Service

William & Mary

— Physics Department —

- Graduate Admissions Committee** Fall 2023 – present

Physics Community Service

- Reviewer of submitted papers for academic journals** 2019 – present
Physical Review Letters, Physical Review D, Journal of High-Energy Physics
- Reviewer of submitted proposals for high-performance computing allocations** 2021
DiRAC-RAC
- Science Olympiad** 2010 – 2013
Volunteer for Indiana Regional Science Olympiad

Conference Organization

- 22nd edition of Particles and Nuclei International Conference (PANIC)** Sep 2021
Lisbon, Portugal – Convener of the “*Hadron Spectroscopy and Exotics*” track
- International Summer Workshop on Reaction Theory** Jun 2017
Bloomington, Indiana – organizer
- International Summer Workshop on Reaction Theory** Jun 2015
Bloomington, Indiana – organizer

Skills

- Languages:** English (Native), Spanish (A1)
Programming: C, C++, Python, Fortran, MATHEMATICA, MATLAB, JAVA, x86 Assembler
Web Development: HTML, CSS, JavaScript
Mechanical Drawing and Modeling: Autodesk AutoCAD, Inventor, PTC Creo
Analysis Software: ANSYS Mult-physics and Fluent, MCNP
Document Creation: L^AT_EX, Markdown, Microsoft Office Suite