

# Andrew W. Jackura

Assistant Professor of Physics, William & Mary

*Curriculum Vitae*

Date – August 7, 2023

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Department of Physics

William & Mary

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WILLIAM & MARY

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## Education

**Doctor of Philosophy** | *Major: Physics*

May 2019

Indiana University

- Dissertation – *Studies in Multiparticle Scattering Theory* pdf
- Advisor – Prof. Adam P. Szczepaniak

**Master of Science** | *Major: Physics*

May 2017

Indiana University

**Bachelor of Science** | *Major: Physics*

May 2013

Purdue University Northwest

**Bachelor of Science** | *Major: Mechanical Engineering, Minor: Applied Mathematics*

May 2011

Purdue University Northwest

## Academic Appointments

**Assistant Professor**

Aug 2023 – present

The College of William & Mary – Physics Department

**Affiliated Scientist**

Feb 2023 – Aug 2023

Lawrence Berkeley National Laboratory – Nuclear Science Division, Nuclear Theory

**Postdoctoral Scholar**

Feb 2023 – Aug 2023

The University of California, Berkeley – Physics Department

**Adjunct Associate Professor**

Aug 2022 – Aug 2023

Old Dominion University – Physics Department

**Postdoctoral Fellow**

Jun 2019 – Feb 2023

Old Dominion University – Physics Department

## Professional Experience

**Nuclear Engineering Associate**

Jan 2013 – Jan 2014

Argonne National Laboratory – Nuclear Science and Engineering Division

**Research Aide**

Aug 2012 – Jan 2013

Argonne National Laboratory – Nuclear Science and Engineering Division

## Honors and 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

**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

## Teaching & Mentoring

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### University Courses

#### — William & Mary —

##### **General Physics I - Problem Session**

Fall 2023

PHYS 101P - Weekly one-hour problem session on introductory calculus-based physics

#### — Old Dominion University —

##### **University Physics I**

Fall 2022

PHYS 226/231/261 - Introductory calculus-based course on mechanics and wave-motion

#### — Indiana University —

##### **Introductory Physics II - Recitation Instructor**

Spring 2017

P222 - Introductory calculus-based course on electromagnetism and optics

also Spring 2015

##### **Introductory Physics I Laboratory**

Fall 2013

P201 - Introductory algebra-based course on mechanics, wave-motion, and thermodynamics

#### — Purdue University Northwest —

##### **University Physics II Laboratory**

Spring 2013

PHYS 251/261 - Introductory calculus-based course on thermodynamics, electromagnetism, and optics

also Fall 2011

### Mentoring

#### — Student Supervision —

##### **Tess Messerer, University of California, Berkeley**

2023

N3AS undergraduate research program

##### **Adriana Baniecki**

2021 – 2023

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

Now an undergraduate student at Notre Dame.

##### **Taylor Powell, Old Dominion University**

2021 – 2022

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

##### **Ajah Harris, James Madison University**

Summer 2021

Jefferson Lab REU program.

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

w/ Raúl Briceño

##### **Kevin Saldaña (CSU, Bakersfield)**

Summer 2018

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

Topic: One Particle Exchange Models in Three Body Scattering

w/ Adam Szczepaniak

#### — Outreach Programs —

##### **Nuclear Physics Mentor Program**

Summer 2023

Online mentorship program through REYES,

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

also 2021, 2022

## Publications


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Citation count (according to [inspirehep.net](https://inspirehep.net)) as of August 7, 2023. 844 total citations to 28 published papers at an average of 30 cites/paper.  $h$ -index of 16.

## Refereed Journal Publications


Raúl A. Briceño, Andrew W. Jackura, Arkaitz Rodas, and Juan V. Guerrero.

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

Phys. Rev. D 107.3 (2023), p. 034504.  pdf


Keegan H. Sherman, Felipe G. Ortega-Gama, Raúl A. Briceño, and Andrew W. Jackura.

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

Phys. Rev. D 105.11 (2022), p. 114510.  pdf


Raúl A. Briceño, Andrew W. Jackura, Felipe G. Ortega-Gama, and Keegan H. Sherman.

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

Phys. Rev. D 103.11 (2021), p. 114512.  pdf


Andrew W. Jackura, Raúl A. Briceño, Sebastian M. Dawid, Md Habib E. Islam, and Connor McCarty.

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

Phys. Rev. D 104.1 (2021), p. 014507.  pdf


Raúl A. Briceño, Maxwell T. Hansen, and Andrew W. Jackura.

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

Phys. Rev. D 101.9 (2020), p. 094508.  pdf

Raúl A. Briceño, Maxwell T. Hansen, and Andrew W. Jackura.

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

Phys. Rev. D 100.11 (2019), p. 114505.  pdf

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

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

Phys. Rev. D 100.5 (2019), p. 054017.  pdf


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

**“Equivalence of three-particle scattering formalisms”.**

Phys. Rev. D 100.3 (2019), p. 034508.  pdf


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

**“Three-body scattering: Ladders and Resonances”.**

JHEP 08 (2019), p. 080.  pdf


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

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

Phys. Rev. Lett. 123.9 (2019), p. 092001.  pdf

A. Rodas et al.

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

Phys. Rev. Lett. 122.4 (2019), p. 042002.  pdf


M. Mikhasenko, A. Pilloni, M. Albaladejo, C. Fernández-Ramírez, A. Jackura, V. Mathieu, J. Nys, A. Rodas, B. Ketzer, and A. P. Szczepaniak.

**“Pole position of the  $a_1(1260)$  from  $\tau$ -decay”.**

Phys. Rev. D 98.9 (2018), p. 096021.  pdf


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

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

Eur. Phys. J. C 79.1 (2019), p. 56.  pdf

J. A. Silva-Castro, C. Fernandez-Ramirez, M. Albaladejo, I. V. Danilkin, A. Jackura, V. Mathieu, J. Nys, A. Pilloni, A. P. Szczepaniak, and G. Fox.


**“Regge phenomenology of the  $N^*$  and  $\Delta^*$  poles”.**

Phys. Rev. D 99.3 (2019), p. 034003.  pdf

- V. Mathieu, J. Nys, C. Fernández-Ramírez, A. N. Hiller Blin, A. Jackura, A. Pilloni, A. P. Szczepaniak, and G. Fox.  
**“Structure of Pion Photoproduction Amplitudes”**.  
 Phys. Rev. D 98.1 (2018), p. 014041.  [pdf](#)
- J. Nys, A. N. Hiller Blin, V. Mathieu, C. Fernández-Ramírez, A. Jackura, A. Pilloni, J. Ryckebusch, A. P. Szczepaniak, and G. Fox.  
**“Global analysis of charge exchange meson production at high energies”**.  
 Phys. Rev. D 98.3 (2018), p. 034020.  [pdf](#)
- A. Pilloni, J. Nys, M. Mikhasenko, M. Albaladejo, C. Fernández-Ramírez, A. Jackura, V. Mathieu, N. Sherrill, T. Skwarnicki, and A. P. Szczepaniak.  
**“What is the right formalism to search for resonances? II. The pentaquark chain”**.  
 Eur. Phys. J. C 78.9 (2018), p. 727.  [pdf](#)
- M. Albaladejo, N. Sherrill, C. Fernández-Ramírez, A. Jackura, V. Mathieu, M. Mikhasenko, J. Nys, A. Pilloni, and A. P. Szczepaniak.  
**“Khuri–Treiman equations for  $\pi\pi$  scattering”**.  
 Eur. Phys. J. C 78.7 (2018), p. 574.  [pdf](#)
- V. Mathieu, J. Nys, C. Fernández-Ramírez, A. Jackura, A. Pilloni, N. Sherrill, A. P. Szczepaniak, and G. Fox.  
**“Vector Meson Photoproduction with a Linearly Polarized Beam”**.  
 Phys. Rev. D 97.9 (2018), p. 094003.  [pdf](#)
- Astrid N. Hiller Blin, César Fernández-Ramírez, Andrew Jackura, Vincent Mathieu, Viktor I. Mokeev, Alessandro Pilloni, and Adam P. Szczepaniak.  
**“Studying the  $P_c(4450)$  resonance in  $J/\psi$  photoproduction off protons”**.  
 Few Body Syst. 59.5 (2018). Ed. by R. Gothe, Y. Ilieva, V. Mokeev, E. Santopinto, and S. Strauch, p. 104.  [pdf](#)
- M. Mikhasenko, A. Pilloni, J. Nys, M. Albaladejo, C. Fernandez-Ramirez, A. Jackura, V. Mathieu, N. Sherrill, T. Skwarnicki, and A. P. Szczepaniak.  
**“What is the right formalism to search for resonances?”**  
 Eur. Phys. J. C 78.3 (2018), p. 229.  [pdf](#)
- J. Nys, V. Mathieu, C. Fernández-Ramírez, A. Jackura, M. Mikhasenko, A. Pilloni, N. Sherrill, J. Ryckebusch, A. P. Szczepaniak, and G. Fox.  
**“Features of  $\pi\Delta$  Photoproduction at High Energies”**.  
 Phys. Lett. B 779 (2018), pp. 77–81.  [pdf](#)
- V. Mathieu, J. Nys, A. Pilloni, C. Fernández-Ramírez, A. Jackura, M. Mikhasenko, V. Pauk, A. P. Szczepaniak, and G. Fox.  
**“Analyticity Constraints for Hadron Amplitudes: Going High to Heal Low Energy Issues”**.  
 EPL 122.4 (2018), p. 41001.  [pdf](#)
- A. Jackura et al.  
**“New analysis of  $\eta\pi$  tensor resonances measured at the COMPASS experiment”**.  
 Phys. Lett. B 779 (2018), pp. 464–472.  [pdf](#)
- V. Mathieu, J. Nys, C. Fernández-Ramírez, A. Jackura, M. Mikhasenko, A. Pilloni, A. P. Szczepaniak, and G. Fox.  
**“On the  $\eta$  and  $\eta'$  Photoproduction Beam Asymmetry at High Energies”**.  
 Phys. Lett. B 774 (2017), pp. 362–367.  [pdf](#)
- A. Pilloni, C. Fernandez-Ramirez, A. Jackura, V. Mathieu, M. Mikhasenko, J. Nys, and A. P. Szczepaniak.  
**“Amplitude analysis and the nature of the  $Z_c(3900)$ ”**.  
 Phys. Lett. B 772 (2017), pp. 200–209.  [pdf](#)
- J. Nys, V. Mathieu, C. Fernández-Ramírez, A. N. Hiller Blin, A. Jackura, M. Mikhasenko, A. Pilloni, A. P. Szczepaniak, G. Fox, and J. Ryckebusch.  
**“Finite-energy sum rules in eta photoproduction off a nucleon”**.  
 Phys. Rev. D 95.3 (2017), p. 034014.  [pdf](#)
- A. N. Hiller Blin, C. Fernández-Ramírez, A. Jackura, V. Mathieu, V. I. Mokeev, A. Pilloni, and A. P. Szczepaniak.  
**“Studying the  $P_c(4450)$  resonance in  $J/\psi$  photoproduction off protons”**.  
 Phys. Rev. D 94.3 (2016), p. 034002.  [pdf](#)

## Preprints

Andrew W. Jackura.

**“Three-body scattering and quantization conditions from  $S$  matrix unitarity”** (Aug. 2022).  pdf

## Reviews & Whitepapers


Miguel Albaladejo et al.

**“Novel approaches in hadron spectroscopy”**.

Prog. Part. Nucl. Phys. 127 (2022), p. 103981.  pdf

Miguel Albaladejo et al.

**“Snowmass white paper: Need for amplitude analysis in the discovery of new hadrons”**. *Snowmass 2021*.

Mar. 2022.  pdf

R. A. Briceño et al.


**“Issues and Opportunities in Exotic Hadrons”**.

Chin. Phys. C 40.4 (2016), p. 042001.  pdf

## Conference Proceedings


Andrew W. Jackura, Raúl A. Briceño, and Maxwell T. Hansen.

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

PoS LATTICE2022 (2023), p. 062.  pdf


Andrew W. Jackura.

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

PoS LATTICE2021 (2022), p. 108.  pdf

Andrew W. Jackura.

**“Matrix Elements of Bound States in a Finite Volume”**.

PoS LATTICE2019 (2019), p. 079.  pdf

Andrew Jackura.

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

PoS Hadron2017 (2018), p. 035

Mikhail Mikhasenko, Andrew Jackura, Bernhard Ketzer, and Adam Szczepaniak.

**“Unitarity approach to the mass-dependent fit of  $3\pi$  resonance production data from the COMPASS experiment”**.

EPJ Web Conf. 137 (2017). Ed. by Y. Foka, N. Brambilla, and V. Kovalenko, p. 05017

Andrew Jackura, Mikhail Mikhasenko, and Adam Szczepaniak.

**“Amplitude analysis of resonant production in three pions”**.

EPJ Web Conf. 130 (2016). Ed. by A. Wrońska, A. Magiera, C. Guaraldo, and H. Ströher, p. 05008.  pdf

## Research Talks

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### Invited Talks

#### — Conferences & Workshops —

**“Towards Multi-hadron matrix elements from Lattice QCD”**


Apr 2023

APS April Meeting 2023, Minneapolis, MN.

**“Few-Body Dynamics from QCD”**  slides

Nov 2022

4th Workshop on Future Directions in Spectroscopy Analysis.

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

Jun 2021

2021 Jefferson Lab Users Organization Annual Meeting.

**“Solving relativistic integral equations for three body systems”**



Aug 2020

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

**“Update on JPAC Activities in Hadron Spectroscopy”**

Jun 2019




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

- “Towards an Analytical Description of Three Particle Scattering”**  slides Apr 2019  
8th Workshop of the APS Topical Group on Hadronic Physics, Denver, CO.
- “Dispersive approach to three body scattering”**  slides Jul 2018  
International Workshop on Partial Wave Analyses and Advanced Tools for Hadron Spectroscopy (PWA10/ATHOS5), IHEP, Beijing, China
- “Hadron Spectroscopy and JPAC Activities”** Nov 2017  
The 84th Annual Meeting of the APS Southeastern Section, Milledgeville, GA.



#### — Colloquia —

- “From Newton to Nuclei”** Apr 2023  
Distinguished Speaker Series, Purdue University Northwest, Hammond, IN.
- “Nuclear Reactions & QCD Spectroscopy”** Apr 2023  
Triangle Nuclear Theory Colloquium, University of North Carolina, Chapel Hill, NC.
- “Nuclear Reactions & QCD Spectroscopy”** Mar 2023  
Physics Colloquium, Old Dominion University, Norfolk, VA.
- “Nuclear Reactions & QCD Spectroscopy”** Mar 2023  
Physics Colloquium, William & Mary, Williamsburg, VA.
- “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)



<b>“Introduction to Nuclear Reactions”</b> [3 lectures]  recordings REYES Nuclear Physics Mentor Program (virtual)	Aug 2021
<b>“Hadron Spectroscopy and Resonances”</b> [4 lectures]  recordings INT Summer School on Problem Solving in Lattice QCD. (virtual) w/ Raúl Briceño. Primary duties included creation of numerical exercises,  git repo	Jun 2021
<b>“Introduction to Lattice Field Theory”</b> [8 lectures] Informal lectures for graduate students associated with Jefferson Lab. (virtual)	Summer 2020
<b>“Partial Wave Analysis &amp; Resonances”</b> [2 lectures]  recordings International Summer School on Reaction Theory, Bloomington, IN. w/ Marc Vanderhaeghen.	Jul 2017
<b>“Education through Experimentation”</b> [1 lectures] ANL Training Course with the Minor Academy of Sciences of Ukraine w/ Joe Braun. Primary duties included preparation of exercises and lecture material.	Aug 2013
<b>“Exercises in Probabilistic Safety Assessment”</b> [2 lectures] 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	Oct 2012
<b>“Four (Six) Factor Formula &amp; Neutron Life Cycle”</b> [1 lecture] 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.	Aug 2012

## Contributed Talks

<b>“Towards accessing <math>\gamma^*\gamma^* \rightarrow \pi\pi</math> from lattice QCD”</b>  slides 10th Workshop of the APS Topical Group on Hadronic Physics, Minneapolis, MN.	Apr 2023
<b>“Few-Body Dynamics from QCD”</b>  slides The 9th International Conference on Quarks and Nuclear Physics (QNP2022) (virtual)	Sep 2022
<b>“Few-Body Dynamics from QCD”</b>  slides 14th Conference on the Intersections of Particle and Nuclear Physics (CIPANP), Lake Buena Vista, FL.	Sep 2022
<b>“Progress in relativistic three-hadron scattering from lattice QCD”</b> 2021 Fall Meeting of the APS Division of Nuclear Physics, (virtual)	Oct 2021
<b>“Connecting Matrix Elements to Multi-Hadron Form-Factors”</b>  slides The 38th International Symposium on Lattice Field Theory, (virtual)	Jul 2021
<b>“Progress in relativistic three-hadron scattering from lattice QCD”</b>  slides 19th International Conference on Hadron Spectroscopy and Structure (HADRON 2021), (virtual)	Jul 2021
<b>“Integral equations for relativistic three-hadron scattering”</b>  slides 9th Workshop of the APS Topical Group on Hadronic Physics, (virtual)	Apr 2021
<b>“Finite volume relations for two hadron matrix elements and form factors”</b> 2020 Fall Meeting of the APS Division of Nuclear Physics, (virtual)	Nov 2020
<b>“Connecting Matrix Elements to Multi-Hadron Form-Factors”</b>  slides Asia-Pacific Symposium for Lattice Field Theory (APLAT 2020), (virtual)	Aug 2020
<b>“Matrix Elements of Bound States in a Finite Volume”</b>  slides The 37th International Symposium on Lattice Field Theory, Wuhan, China	Jun 2019
<b>“Phenomenology of 3-to-3 Scattering”</b>  slides Scattering from the Lattice: application to phenomenology and beyond, Dublin (Ireland)	May 2018
<b>“Dispersive approach to three-particle systems”</b>  slides “Multi-Hadron Systems from Lattice QCD”, INT, Seattle, WA	Feb 2018
<b>“Tensor resonances in <math>\eta\pi</math> production at COMPASS”</b> 2nd Workshop on Future Directions in Spectroscopy Analysis, Mexico City, Mexico	Nov 2017
<b>“Peripheral Production of <math>\eta\pi</math> Resonances”</b> Fall Meeting of the APS Division of Nuclear Physics, Pittsburgh, PA	Oct 2017
<b>“Tensor Resonances in <math>\eta\pi</math> Using COMPASS Data”</b>  slides XVII International Conference on Hadron Spectroscopy (HADRON 2017), Salamanca, Spain	Sep 2017
<b>“Exotica in Hadron Spectroscopy”</b> 4th PIKIO Meeting, Lexington, KY	Sep 2017

<b>“Amplitude analysis for diffractive resonance production”</b>  slides International Workshop on Partial Wave Analyses and Advanced Tools for Hadron Spectroscopy (PWA9/ATHOS4), Bad Honnef, Germany	Mar 2017
<b>“Phenomenological studies on hadronic reactions and resonances extraction”</b> 3rd PIKIO Meeting, Bloomington, IN	Mar 2017
<b>“Unitarized amplitudes for diffractive production of three pion resonances”</b> 7th Workshop of the APS Topical Group on Hadronic Physics, Washington, D.C.	Feb 2017
<b>“Partial wave analysis of <math>3\pi</math> with pion and photon beams”</b> 2016 Fall Meeting of the APS Division of Nuclear Physics, Vancouver, BC, Canada	Oct 2016
<b>“Amplitude analysis of resonant production in three pions”</b>  slides 14th International Workshop on Meson Production, Properties and Interaction (MESON), Kraków, Poland	Jun 2016
<b>“Amplitude Analysis of Exotic XYZ Quarkonium States”</b>  slides XVI International Conference on Hadron Spectroscopy (HADRON 2015), Newport News, VA	Sep 2015
<b>“Amplitude Analysis of Exotic Hadrons”</b> XXVIII Midwest Theory Get-Together, Argonne National Laboratory, Lemont, IL	Sep 2015

— Posters —

<b>“Studies of Exotica and the Global Analysis Efforts at JPAC”</b> SURA Board of Trustees Meeting, Jefferson Lab, Newport News, VA.	Apr 2018
<b>“Partial Wave Analysis of <math>3\pi</math> Systems”</b> National Nuclear Physics Summer School, MIT, Cambridge MA.	Jul 2016

## Professional Service

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### William & Mary

<b>Graduate Admissions Committee</b>	Fall 2023 – present
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### Physics Community Service

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

### Conference Organization

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

## Skills

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**Languages:** English (Native), Spanish (A1)  
**Programming:** C, C++, Python, Fortran, Mathematica, MATLAB  
**Document Creation:** Microsoft Office Suite, L<sup>A</sup>T<sub>E</sub>X, Markdown