Curriculum Vitae (short-form)

Personal Details

Name	Dr. Andrew James Ruehe Puckett
Address	196 Auditorium Road, U-3046, Storrs, CT 06269-3046
Office phone	(860) 486-7137
Email	andrew.puckett@uconn.edu, puckett@jlab.org
Homepage	https://puckett.physics.uconn.edu/

Education

Ph.D., Physics	Massachusetts Institute of Technology. Awarded 2010-02-17. GPA 4.9/5.0
	Thesis: *Recoil Polarization Measurements of the Proton Electromagnetic Form Factor Ratio to High Momentum Transfer*. Accepted 2009-10-13. Link
	Advisor: William Bertozzi, Professor of Physics.
B. S., Physics	University of Virginia, 2004, *with Highest Distinction*. GPA 3.86/4.0

Professional Experience

08/2019-Present	Associate Professor, Physics Department, University of Connecticut, Storrs, CT.
08/2013-08-2019	Assistant Professor, Physics Department. University of Connecticut, Storrs, CT.
01/2012-08/2013	Staff Scientist, Hall B Group. Thomas Jefferson National Accelerator Facility (Jefferson Lab). Newport News, VA
10/2009-12/2011	Director's Postdoctoral Fellow, P-25 Group. Los Alamos National Laboratory, Los Alamos, NM

Publications

Last updated: 5/2024 Publication List

Honors/Awards/Funding

2023-2026	Three-year renewal for $867,000 from the Department of Energy, Office of Science, Office of Nuclear Physics. Title: "Three-dimensional Structure of the Nucleon"
2020-2023	New three-year grant for $795,000 from the Department of Energy, Office of Science, Office of Nuclear Physics. Title: "Three-dimensional Structure of the Nucleon"
2021	Sabbatical Salary support, Jefferson Lab (non-competitive award). 50% academic year salary and fringe benefits from Jefferson Lab to facilitate a full-year sabbatical at JLab during calendar year 2021, during which the first two SBS experiments in Hall A were installed and successfully completed.
2015-2020	US Department of Energy Office of Science Early Career Award:

- Five-year research grant totaling $750,000.
- One of 50 proposals selected for funding from about 620 applications in the 2015 competition.

2013-2018	Bridge appointment, Thomas Jefferson National Accelerator Facility (Jefferson Lab or JLab). Bridge appointment with JLab supporting half of my academic-year salary and reducing my teaching load for five years.
2009	Southeastern Universities Research Association (SURA)/Jefferson Science Associates (JSA) Thesis Prize (Best Ph.D. thesis completed on research carried out at Jefferson Lab during 2009).
2009-2011	Director's Postdoctoral Fellowship, Los Alamos National Laboratory (accepted).
2009	Director's Postdoctoral Fellowship, Argonne National Laboratory (offered).
2006-2008	SURA/JSA Graduate Fellowship. Fellowship support for half the stipend of my graduate research assistantship.
2006	First prize, SURA annual graduate student poster competition.
2004-2005	Presidential Graduate Fellowship, MIT. Full stipend support with no teaching requirement and no required commitment to a specific research group for selected first-year graduate students in physics.
2004	James W. Elkins Award, University of Virginia (most outstanding graduating physics major).
2004	Phi Beta Kappa, University of Virginia.
2000-2004	Echols Scholar, University of Virginia

Professional Organizations/Service Work

2013-Present	American Association of University Professors (AAUP), National and UConn chapter member.
2005-Present	American Physical Society (APS) • Division of Nuclear Physics (DNP) • Topical Group on Hadronic Physics (GHP)
2017-2019	Hall A Collaboration Coordinating Committee, Secretary
2019-2021	Chair, SBS Collaboration Coordinating Committee
2014-2020	E12-09-018 experiment representative in SBS Coordinating Committee
2020-present	E12-07-109 experiment representative in SBS Coordinating Committee
2021-2023	Jefferson Lab Users' Organization Board of Directors, at-large member
2016-2024	UConn physics department colloquium chair
2020-2024	UConn physics department graduate admissions committee
2020-present	UConn physics department annual alumni newsletter organization (with support of physics admin staff).
2019	NSF panel reviewer
2015-present	Peer reviewer for several NSF and DOE grant proposals per year
2015-present	Frequent referee for peer reviewed journal publications in nuclear/particle physics, including Physical Review, Physics Letters, European Physical Journal and others.
2023-2024	Nuclear physics faculty search committee chair

2024-present	UConn physics department course and curriculum committee
2024-present	UConn physics: Future of the department committee
2024-present	UConn physics: Undergraduate affairs committee
2024-present	UConn physics: Particles and Nuclear Physics Seminar Organization

Research Experience/Achievements (since Ph.D.)

08/2013-Present University of Connecticut

- Completion (as of May 2024) of five SBS experiments: E12-09-019, E12-09-016, E12-20-010, E12-17-004, and E12-20-008. Data currently under analysis.
- Spokesperson of approved experiment E12-09-018 studying neutron transverse spin structure in Hall A
- Spokesperson of approved experiment E12-07-109 measuring polarization transfer in high-Q^2 elastic electron-proton scattering. **Scheduled 2024-2025**.
- Spokesperson and contact person of approved (and completed) experiment E12-20-008 that will measure polarization transfer in wide-angle charged pion photoproduction $\vec{\gamma}n \to \pi^- \vec{p}$.
- Spokesperson of approved (and completed) experiment E12-17-004.
- Ring Imaging Cherenkov (RICH) detector preparation for Hall A experiments.
- Leader of simulation, software, and analysis working group within the SBS collaboration. Major software projects developed/led include:

  SBS-offline Library for the specialized event reconstruction and online and offline data analysis software needed by the SBS experiments in Hall A, based on the Podd framework (standard analysis software for Hall A).

  g4sbs GEANT4-based Monte Carlo simulation package for the SBS family of experiments in Hall A.

  SBSGEM_standalone Standalone ROOT-based code for the analysis of GEM data: cluster-finding, hit reconstruction, track-finding, software alignment, analysis of spatial resolution, detection and track-finding efficiency, gain, etc.
- Data analysis and publication of physics results from Jefferson Lab experiments.
- Advising of Ph.D. and Masters' thesis students in UConn physics department. Three Ph.D. students graduated (pending two summer 2024 defenses), four current advisees (down to two after imminent thesis defenses).
  - Dr. Richard F. Obrecht, graduated 2019 (thesis here). Now Data Scientist/Machine Learning Engineer at Johns Hopkins Applied Physics Lab.
  - Sebastian Seeds, 2018-2024 (expected defense summer 2024). *Has offer for Staff Scientist 2 position at Los Alamos National Lab.*
  - Provakar Datta, 2018-2024 (expected defense summer 2024).
  - Nikolas (Kip) Hunt, 2022-2028 (expected).
  - Sarah Tucker, 2023-2029 (expected).
- Supervision of undergraduate research thesis and independent study projects.
- Development of new experiment proposals.
- Total of $2.4 million in sole-PI, competitive extramural funding since 2015 (average $220k/year), mainly from US Department of Energy.

- Postdoctoral mentoring, 2016-present.
  - Dr. Eric Fuchey, 2016-2022. Now at the College of William and Mary
  - Dr. Rupesh Dotel, 2022-2023. Currently in medical physics.
  - TBD (2024-present, search currently underway).

01/2012-08/2013 Jefferson Lab, Hall B Group

- Research, development, simulation, design, construction and testing of the High Threshold Cherenkov Counter (HTCC) for the CLAS12 spectrometer in Hall B. The HTCC detects Cherenkov radiation emitted by charged particles moving faster than the speed of light in the CO_2 gas volume of the detector. This detector is used to identify scattered electrons with momenta up to 5 GeV/c.
- Membership and active participation in the physics program of the CLAS collaboration.
- Data analysis and publication of results from Jefferson Lab experiments.
- Quality control, including ultrasonic void detection and laser profile measurements, of soldering process performed on superconducting Rutherford cable by external contractor for the CLAS12 Torus and solenoid magnets.

10/2009-12/2011 Los Alamos National Laboratory, P-25 Group (Director's Postdoctoral Fellowship).

- Analysis, simulation and preparation of publications from completed Jefferson Lab experiment E06-010: the neutron transversity experiment. This experiment, which collected data in 2008-2009, measured the target single spin asymmetries and the beam-target double-spin asymmetries in charged pion electro-production in semi-inclusive deep-inelastic electron scattering (SIDIS) on a transversely polarized Helium-3 target, shedding light on the transverse spin and orbital angular momentum distributions of quarks in the neutron.
- Development of experiment proposals for the JLab 12 GeV Upgrade, including E12-09-018, of which I am a spokesperson, which was approved for 64 beam-days with an "A-" scientific rating by the Jefferson Lab Program Advisory Committee (PAC) at its 38th meeting in August 2011.
- Data analysis and final publication of several experiments related to the proton form factors, including E04-108 (the subject of my Ph.D. thesis), E04-019, and E99-007

Courses Taught (catalog descriptions here)

PHYS 3201 Electricity and Magnetism I

- Spring semester, 2024

PHYS 3402 Quantum Mechanics II

- Spring semester, 2022

PHYS 3101 Mechanics I

- Spring semester, 2025
- Fall semester, 2023
- Spring semester, 2020

PHYS 1600Q Introduction to Modern Physics

- Fall semester, 2018
- Fall semester, 2017

PHYS 2501W Advanced Undergraduate Laboratory

- Spring semester, 2025
- Spring semester, 2023
- Fall semester, 2022
- Fall semester, 2020
- Fall semester, 2019
- Fall semester, 2018
- Fall semester, 2014
- Fall semester, 2013

PHYS 1010Q Elements of Physics.

- Fall semester, 2016
- Fall semester, 2015

May 17, 2024