

# Rebecca Lynn Rapp

Graduate Student, Carnegie Mellon University, Pittsburgh, PA, 15213

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## EDUCATION

### **M.S. / Ph.D. in Physics** (May 2019 / Anticipated 2022)

Carnegie Mellon University, Pittsburgh, PA 15213

- ≈ Field: Experimental nuclear/particle physics, neutrino physics
- ≈ Advisor: Diana Parno
- ≈ Thesis Committee: Curtis Meyer, Diana Parno, Riccardo Penco, Brian Quinn
- ≈ Highlighted Courses: Introduction to Mathematical Physics, Quantum Mechanics I & II, Statistical Mechanics, Classical Electrodynamics I & II, Particle Physics I & II, Quantum Field Theory, Introductory Astrophysics

### **B.A., Physics & Mathematics** (May 2017)

Washington & Jefferson College, Washington, PA 15301

- ≈ Advisors: Michael McCracken (Physics), Faun Doherty (Mathematics)
- ≈ Honors: *Summa Cum Laude*, ΦBK, ΣΠΣ, ΙΙΜΕ, The Clyde Sheperd Atchison Prize (Mathematics), The George Winchester Prize (Physics), Alpha Scholar

## PUBLICATIONS

- ≈ [First constraint on coherent elastic neutrino-nucleus scattering in argon](#)  
COHERENT collaboration, Phys. Rev. D. **100**. 115020 – 9 December 2019.

## PREPRINTS

- ≈ [COHERENT 2018 at the Spallation Neutron Source](#)  
COHERENT collaboration, 2018 white paper. arXiv:1803.09183v2 [physics.ins-det]

## CONFERENCE PROCEEDINGS

- ≈ [COHERENT Plans for D<sub>2</sub>O at the Spallation Neutron Source](#)  
American Physical Society Division of Particles & Fields Meeting 2019. arXiv: 1910.00630 [physics.ins-det]

## RECENT PRESENTATIONS

- ≈ Invited: [ORNL Neutrino Flux Simulations: FTS and STS](#)  
Magnificent CEvNS Workshop 2019, Chapel Hill, NC (11 November 2019)
- ≈ Contributed: [COHERENT Plans for D<sub>2</sub>O at the Spallation Neutron Source](#)  
American Physical Society Division of Particles & Fields Annual Meeting, Boston, MA (1 August 2019)
- ≈ Invited: [SNS Neutrino Flux](#)  
Workshop on Fundamental Physics at the Second Target Station, Oak Ridge, TN (27 July 2019)
- ≈ Contributed: [Pion production at the Spallation Neutron Source](#)  
The 15<sup>th</sup> International Conference on Meson-Nucleon Interactions and the Structure of the Nucleon (MENU 2019), Pittsburgh, PA (4 June 2019)
- ≈ Poster: [Neutrino Flux Simulations at the ORNL Spallation Neutron Source](#)  
XXVIII International Conference on Neutrino Physics and Astrophysics (Neutrino 2018), Heidelberg, Germany (6 June 2018)

## PROFESSIONAL DEVELOPMENT

- ≈ Junior Representative to the COHERENT Collaboration Board (January 2020 - present)
- ≈ APS Conference for Undergraduate Women in Physics
  - Member of the local organizing committee in 2020 (CMU)
  - Panelist on *Work/Life Balance: Personal Interests* breakout session in 2020 (CMU)
  - Assisted in networking events as a graduate student in 2019 (TCNJ)
  - Attended as an undergraduate in 2016 (ODU/JLab) and 2017 (Princeton)
- ≈ Constructive Interference: Women and Minorities in Physics (CMU group - joined August 2017)
- ≈ APS Division of Nuclear Physics Meeting (October 2017)

## TECHNICAL SKILLS

- ≈ Programming:
  - Languages/Tools: python, Mathematica, LabVIEW, Arduino, C++, Geant4, ROOT, RooFit, coda
  - Techniques: large-scale data analysis, data visualization and fitting, Monte Carlo simulation, basic instrument interfacing, data acquisition
- ≈ Electronics: oscilloscopes, basic circuit construction, high voltage operations, PMT base design and DAQ

## TEACHING EXPERIENCE

- ≈ Teaching Assistant for 33-121: Physics I for Science Students August 2017 - May 2019  
*Department of Physics, Carnegie Mellon University*
    - Recitation: facilitating group problem solving, leading full-class discussions, reviewing lecture concepts, teaching basic programming practices in python
    - Course Center: helping walk-in students with course-related problems (essentially TA office hours)
    - Grading duties: homework, python labs, quizzes, and exams
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| Spring 2019 - Recitation (1), Course Center (1), Grading | Professor: Manfred Paulini              |
| Fall 2018 - Recitation (2), Course Center (1.5), Grading | Professor: Stephen Garoff               |
| Spring 2018 - Recitation (2), Course Center (2), Grading | Professors: Kunal Ghosh and Matt Walker |
| Fall 2017 - Recitation (2), Course Center (1), Grading   | Professor: Stephen Garoff               |

## REFERENCES

Assistant Prof. Diana Parno Graduate Research Advisor Carnegie Mellon University dparno@cmu.edu	Associate Prof. Michael McCracken Department Chair, Undergraduate Advisor Washington & Jefferson College mmccracken@washjeff.edu
Dr. Belkis Cabrera-Palmer Radiation and Nuclear Detection Sandia National Laboratories (Livermore) bcabrer@sandia.gov	Prof. Arthur Kosowsky Department Chair, PghCUWiP LOC Member University of Pittsburgh kosowsky@pitt.edu
Prof. Manfred Paulini Associate Dean for Faculty and Graduate Affairs Carnegie Mellon University paulini@cmu.edu	Prof. Stephen Garoff Course Instructor (TA Responsibilities) Carnegie Mellon University sg2e@cmu.edu