

Samuel D. Flynn

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EDUCATION

Wake Forest University, Winston-Salem, NC

Major: Bachelor of Science with Honors in Physics

Minor: Mathematics

Major GPA: 3.62/4.0; Cumulative GPA: 3.21/4.0

Graduation Date: May 2013

North Carolina State University, Raleigh, NC

Physics Ph.D Student

August 2014-Current

RELEVANT COURSEWORK

NC State: *Graduate Level:* Classical Mechanics, E&M(2 semesters), Quantum Mechanics, General Relativity, Statistical Mechanics, Quantum Field Theory (current), and Computational Physics (current).

Wake Forest: *Graduate Level:* Classical Mechanics, E&M, Quantum Mechanics (2 semesters), and Statistical Mechanics.

Undergraduate Level: :Modern Physics, Electronics, Classical Mechanics (1.5 Semesters), E&M (1.5 semesters), Quantum Mechanics (2 semesters), Cosmology, Optics, Particle Physics, Thermodynamics/Statistical Mechanics.

Mathematics : Multivariable Calculus, Linear Algebra, Ordinary Differential Equations, Advanced Mathematics for the Physical Sciences, Numerical Methods, Abstract Algebra, Representation Theory.

Chemistry : General chemistry I&II (AP credit) with labs, Organic Chemistry I&II with labs, Physical Chemistry.

Computer Science : Working knowledge of LaTex, Maple, Mathematica, Python.

PROFESSIONAL EXPERIENCE

Researcher, North Carolina State University, Particle/Astrophysics, Raleigh, NC Aug 2014 – Currently

- Worked with Dr. Gail McLaughlin investigating the neutrino oscillations in cosmological settings, including black hole accretion disks and protoneutron stars.
- Work includes first principles investigations into MNR effects in black hole accretion disks, and multi-angle, multi-energy simulations of protoneutron star neutrinos.

Researcher, Wake Forest University, Theoretical Particle Physics, Winston-Salem, NC Jan 2011 – May 2013

- Worked with Dr. Eric Carlson to explore the properties of theoretical long lived neutrino “stars”.
- Learned additional topics including numerical methods, general relativity, particle physics, and quantum field theory.
- Worked both alone and with Dr. Carlson on all aspects of the research.
- Presented a poster and talks on this research at Society of Physics and Wake Forest University conferences.
- Preparing a paper for publication, and wrote a thesis for the distinction of graduating with honors in physics.

Researcher, Wake Forest University, Science Education, Winston-Salem, NC Jun 2010 – Jun 2012

- Worked with Dr. Jed Macosko on two projects to improve the state of science education.
- Helped develop “Biobook”, a non-linear electronic textbook structured around the way that students learn.
- Acted as Teaching Assistant for a first year seminar where students helped to develop the BioBook
- Assisted in adapting the Biobook concept to physics for the “Physbook” project.

Teaching Assistant, NC State Physics Dept.(2014-2015) / Wake Forest Physics Dept.(2011-2014)

- Led lab sessions, including lectures and demonstrations of lab concepts and procedures, for 3 different introductory physics labs, as well as the higher level “Modern Physics” lab and electronics lab, intro lab for physics majors, and intro lab for engineering majors.
- Helped run online classes for natural science majors. Answered questions via email/forums, in person, graded.
- Serve as a primary resource for students in and out of lab sessions and evaluated students’ reports
- Led tutorial sessions twice weekly, answering questions and solving problems in a classroom like setting.

LEADERSHIP AND CONFERENCES

President, Graduate Physics Students Association, NC State University May 2015

- Elected by members of the university graduate physics students to oversee planning, fundraising, and meetings.

Society of Physics Zone Conference April 2012

- Invited to speak at the SPS zone conference on my research. Received an award for best talk.

President, Society of Physics Students, Wake Forest University April 2012 – Present

- Elected by members of the university chapter to oversee event planning, fundraising, and meetings

Undergraduate Representative for Physics Department Program Review August 2012 – Present

- Served as a peer adviser to first year students, assisting with course scheduling and campus acclimation