August 3, 2017

John L. Waczak

CONTACT INFORMATION

Researcher
Roundy Research Group - Oregon State University
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INTERESTS

Computational Physics, Applied Mathematics, Spectroscopy

EDUCATION

Oregon State University, Corvallis, OR. September 2015 – present
Bachelor of Science in Physics and Mathematics (GPA 3.90/4.0)

TECHNICAL SKILLS

Programming and Scripting: Python, C++, C#, Mathematica, Microsoft Word, Microsoft Excel, numpy, Matplotlib, SQLite, PID control, Modbus serial protocol
Electronics: Arduino, Raspberry Pi, Nation Instruments, Soldering, basic circuit design

EXPERIENCE

Roundy Research Group, Oregon State University January 2017 – Present
Undergraduate Researcher github.com/john-waczak/dynein_walk
I am working with Dr. Roundy to develop and test computational simulations which evaluate a physical model for the locomotion of Dynein, a cellular motor protein. My duties include editing simulation code (C++), writing scripts to analyze and visualize large data sets (python), exploring the simulation space to find the best set of parameters to produce *physical* behavior, and presenting work at weekly group meetings.

Cooper Environmental Services, Beaverton, OR March 2015 – September 2017
Intern
I Worked in the lab to evaluate the physical and chemical properties of various filter media in order help the company decide which filter to use in the Xact Ambient Metals Monitor. I designed and implemented controller logic (using a PID loop) for controlling a vacuum pump through c# in conjunction with a National Instruments IO board. Using Modbus serial communications protocol, I created code to make data accessible locally with a Modbus slave device. I wrote code using SQLite to send the same data to a local database for long term storage.

ACTIVITIES

- **Lambda Chi Alpha ($\Lambda X A$)** Vice President September 2015 to Present
  I am the current Vice President of the Alpha Lambda chapter of Lambda Chi Alpha Fraternity. We are a 140 man organization devoted to building leaders and serving our community. My duties as VP include organizing weekly brotherhood event, presenting each week during our chapter meeting, talking with Alumni, and sitting on our executive committee.
- **Society of Physics Students** Member, Mentor September 2015 to present
  As a mentor, I am paired with a new undergraduate physics major whom I help acclimate to university classes (expectations, resources, class suggestions, etc...). We also actively engage the community through outreach events like the August 2017 eclipse viewing.
- **Sigma Pi Sigma ($\Sigma\Pi\Sigma$)** National Physcis Honor Society member June 2017 to present
- **Community Outreach Inc.** Volunteer September 2015 to present
  Helped raise over 300,000 lbs. of food and $30,000 for local families through through my fraternity's philanthropic events: Watermelon Bash, "Caddyshacked", "Can-you-dash".

AWARDS

- **Lambda Chi Alpha - Alpha Lambda Chapter Freshmen of the Year** June 2016
  Present for grades, involvement, and overall chapter vote.
- **Oregon State honor roll** 2015-present
  Presented for achieving above a 3.5 GPA and being enrolled in a minimum of 12 credit hours per term.

REFERENCES

Available upon request.