

EDUCATION

Seattle, WA **University of Washington** **June 2015 (Expected)**

- Will graduate with B.S. in Chemistry and Physics with Honors, magna cum laude (top 3.5%). GPA: 3.93.
- Relevant coursework: biology, organic chemistry (with lab), quantum mechanics, biochemistry, linear algebra, thermodynamics, statistical mechanics.
- Self-studied: partial differential equations, machine learning (some), genetics, algorithms.

SAT: 760 Mathematics, 800 Critical Reading, 750 Writing

GRE: 165 Verbal (95%), 168 Quantitative (96%), 5.0 Analytical Writing (93%)

RESEARCH

Undergraduate Researcher **Kaeberlein Lab** **Sept. 2012—Oct. 2013**

- Developed SQL database with JavaScript-based web interface that called server-side R scripts to facilitate easy in-lab data analysis, annotation, and maintenance of multiple experimental datasets.
- Assisted in maintaining the research group's web site and server and developed software that facilitated data entry of *C. elegans* lifespans.
- Created transgenic strains of *C. elegans* nematode for use in lifespan experiments.

Undergraduate Researcher **Stoll Lab** **Feb. 2013—Present**

- Applied EPR spectroscopy and mathematical and computational analysis to elucidate properties of materials used for organic solar cell construction.
- Constructed EPR sample with novel method producing over 200% improvement in signal strength compared to methods used in literature.
- Used MATLAB to simulate an EPR signal and fit *g*-value and line broadening parameters to my experimental data with Nelder-Mead simplex fitting.
- Adapted Bloch equations to account for creation-annihilation of polaron pairs to create a mathematical model of light-induced excitation and charge generation/recombination in organic solar cell materials.

Undergraduate Researcher **Computational Biology Research Group** **Sum. 2011, Nov. 2013—Present**

- Computationally verified that viral envelope proteins have a significantly larger number of variable cysteine loops using Python scripting to analyze a large dataset of protein data.
- Created client-side "bots" that communicate with each other to correlate an individual's personal genetic features with drug interactions and effects predicted with the CANDO platform.

PROJECTS

Class Project **ATM S 380 – Weather/Climate Prediction** **Winter 2013**

- Collaboratively applied the Weather and Research Model to the area including the Western Arctic Ocean, North Atlantic Ocean, and Europe with a 40 kilometer resolution and manipulated thickness of sea ice in the model.
- Determined that weather "blocking" is more intense when sea ice thickness is lower, potentially giving a partial explanation for more prolonged extreme weather (via blocking) caused by global warming.

MISCELLANEOUS

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- **Languages:** English (native), Cantonese (native), French (proficient), Mandarin (familiar).
 - **Programming:** Python (proficient), Java (proficient), C# (proficient), MATLAB (proficient), C++ (familiar), C (familiar), PHP (familiar).
 - **Interests:** High performance computing, computational biology, applied mathematics, finance.
 - **Awards:** AIME qualifier.