

Sean M Wahl

745 The Alameda
Berkeley, CA 94704

<https://smwahl.github.io/>

swahl.smw@gmail.com
(714) 722-0691

EDUCATION

- PhD **University of California, Berkeley**, May 2017
Earth and Planetary Sciences; Designated Emphasis in Computational Science and engineering
- BS **Massachusetts Institute of Technology**, May 2011
Physics; Earth, Atmospheric and Planetary Sciences (dual major)

SKILLS

Python, C++, FORTRAN, statistical analysis, data visualization, parallel computing (openMP), object-oriented programming, machine learning (scikit-learn), technical writing, image processing, GIS, shell scripting, Git, unit-testing, GNU Make, SQL

EXPERIENCE

Post-doctoral Researcher in Planetary Science, UC Berkeley (July 2017-present).
Graduate Student Researcher in Planetary Science, UC Berkeley (2011-May 2017).
Graduate Student Instructor, UC Berkeley (Spring 2012 and Fall 2014).
Research Assistant (Undergraduate Research Opportunities Program), MIT (2008-2011).

Software and Data

- Designed algorithms for and developed a software package to calculate self-consistent gravitational fields for fluid planets in *C++* and *Fortran*; with plans to distribute it to the community.
- Modified and utilized code on *massively parallel* machines to perform novel types of first-principles quantum chemistry simulations.
- Implemented system for storing and analyzing simulation results using *Python* and statistical mechanics methods.
- Performed a statistical study of the relation between social media and billboard success as part of the 2015 *CDIPS* Data Science Workshop at UC Berkeley.

Project Design

- Collaborated with the science team for *NASA's JUNO* spacecraft mission, presenting the initial analysis of Jupiter's gravity measurements. Developed a computational framework and methods for analyzing gravitational data and comparing to state-of-the-art models of planet interiors.
- Designed and carried out research projects applying first-principles quantum chemistry techniques to outstanding problems in planetary science. Co-authored grant proposals to the *NSF* and *NASA*. Presented results at internationally recognized conferences and in peer-reviewed journal articles, including 5 first author publications.

Leadership

- Co-led a project with a multi-disciplinary team of young scientists as part of the *Cooperative Institute for Dynamic Earth Research* 2014 Summer Program.
- Mentored visiting scholars from Japan and other U.S. Universities. Aided them in designing research projects with resources available through my research group at UC Berkeley.
- Developed tutorials on scientific computing, data analysis and visualization in *Python* for an undergraduate class and for other researchers through the Berkeley Chapter of *The Hacker Within*.
- Volunteered as part of the *Bay Area Scientists in Schools* developing material to help bay area middle school students understand geological processes going on beneath their feet.

ADDITIONAL INFORMATION

Can read, speak and write German; Traditional Irish Musician; Mac, PC and Linux proficient; Familiar with basic *PhotoShop* and *HTML*.