

# Sean M Wahl

745 The Alameda  
Berkeley, CA 94707

<https://seanwahl.com/>

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, parallel computing (openMP), machine learning (scikit-learn), data visualization, image processing, object-oriented programming, technical writing, shell scripting, unit-testing, Git, SQL, GIS, GNU Make, Matlab, Mathematica, LaTeX

## EXPERIENCE

- Post-doctoral Researcher in Planetary Science, UC Berkeley (July 2017-April 2021).  
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 (at *NERSC* and *NAS*) to perform novel first-principles quantum chemistry simulations, and simulations of planet interior structures and tides.
- Implemented system for storing and analyzing simulation results using *Python* and statistical methods.
- Developed lectures and coursework for a unit on image processing in *Python* using *LANDSAT* satellite imagery; and on remote sensing using *Google Mars* for undergraduate classes at UC Berkeley
- Studied music billboard success for 2015 *CDIPS* Data Science Workshop using web-scraping and *SQL*.

## 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 quantum chemistry simulations to 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 7 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 undergraduate scholars from Japan and 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* to teach bay area middle school students about geological processes going on beneath their feet.

## ADDITIONAL INFORMATION

Can read, speak and write German; Mac, PC and Linux proficient; Familiar with basic *Illustrator*, *Photoshop* and *HTML*.