http://schultz.physics.ucdavis.edu **Kasey W. Schultz** kwschultz@ucdavis.edu

Education

University of California, Davis 2012 → Present
M.S. in Physics — Dec 2013
Ph.D in Physics — 2016, expected

University of Miami, Coral Gables, FL 2008 → 2012
B.S. in Physics, Applied Mathematics. *Cum Laude*

Research

Department of Physics, **University of California, Davis**
Graduate Student Researcher June 2013 → Present
Advisor: Prof. John Rundle

- Developing the Virtual Quake simulator, analyzing large data sets
- Developing computational infrastructure for generating catalogs of observable seismic surface patterns as well as earthquake and tsunami scenario catalogs
- Compiling computational tools for simulation data analysis and visualization into Python modules

Department of Astronomy, **California Institute of Technology**, Pasadena, CA
Summer Undergraduate Research Fellow Summer 2011
Advisor: Dr. Brendan Crill, NASA JPL

- Updated and expanded the data analysis pipeline for the Planck collaboration
- Identified correlations between detector model parameters using the D.O.E.'s supercomputing center NERSC

Department of Physics, **University of Miami**
Research Assistant 2009 → 2012
Advisor: Prof. Kevin Huffenberger

- Reconstructed the optical properties of a Cosmic Microwave Background telescope (WMAP) from its measured radiation maps
- Identified a selection bias in the WMAP point source catalog

Published Research

K. W. Schultz, M. K. Sachs, E. M. Heien, M. R. Yoder, J. B. Rundle, D. L. Turcotte, and A. Donnellan, *Virtual California: Statistics, Co-Seismic Deformations and Gravity Changes for Driven Earthquake Fault Systems*, International Association of Geodesy Symposia, **in press** (2015)

M. R. Yoder, **K. W. Schultz**, E. M. Heien, J. B. Rundle, D. L. Turcotte, J. W. Parker and A. Donnellan. *The Virtual Quake earthquake simulator: A simulation based forecast of the El Mayor-Cucapah region and evidence of earthquake predictability*, Geophysical Journal International, **under review** (2015)

M. R. Yoder, **K. W. Schultz**, E. M. Heien, J. B. Rundle, D. L. Turcotte, J. W. Parker and A. Donnellan. *Forecasting earthquakes with the Virtual Quake simulator: Regional and fault-partitioned catalogs*, International Association of Geodesy Symposia, **under review** (2015)

K.W. Schultz, M.K. Sachs, J.B. Rundle, D.L. Turcotte, *Simulating Gravity Changes in Topologically Realistic Driven Earthquake Fault Systems*, Pure and Applied Geophysics, doi: 10.1007/s00024-014-0926-4, ***in press*** (2014)

K. W. Schultz and K. M. Huffenberger, *Stacking catalogue sources in WMAP data.* Monthly Notices of the Royal Astronomical Society, Volume 424, Issue 4, pp. 3028-3036 (2012)

Conferences & Talks

K. W. Schultz, M. K. Sachs, E. M. Heien, M.R. Yoder, J. B. Rundle, D. L. Turcotte, A. Donnellan.
poster: *Virtual Quake: The Software Formerly Known as Virtual California*
Seismological Society of America (SSA) Meeting 2015, Pasadena, CA. Apr 2015

K. W. Schultz, M. K. Sachs, E. M. Heien, J. B. Rundle, J. Fernandez, D. L. Turcotte, A. Donnellan. **talk**: *Virtual Quake: Earthquake Statistics, Surface Deformation Patterns, Surface Gravity Changes and InSAR Interferograms for Arbitrary Fault Geometries* **(won an OSPA award)**
American Geophysical Union (AGU) Fall Meeting 2014, San Francisco, CA. Dec 2014

K. W. Schultz, M. K. Sachs, E. M. Heien, J. B. Rundle, J. Fernandez, D. L. Turcotte, A. Donnellan. **poster**: *Virtual California: Earthquake Statistics, Surface Deformation Patterns, Surface Gravity Changes and InSAR Interferograms for Arbitrary Fault Geometries.*
Southern California Earthquake Center (SCEC) Meeting 2014, Palm Springs, CA. Sep 2014

K. W. Schultz, J. B. Rundle, M. K. Sachs, K. F. Tiampo, T. J. Hayes, J. Fernandez, D. L. Turcotte, A. Donnellan. **talk**: *Monitoring Major Fault Systems from Space: Modeling Implications for Dedicated Gravity Missions.* GENAH Conference. **Matsushima, Japan**. July 2014

Multi-Hazards Summer School: 1 week workshop on disaster prediction, preparedness, and response hosted by IRIDeS at Tohoku University and by the Association of Pacific Rim Universities (APRU). **Sendai, Japan**. July 2014

K. W. Schultz, B. Crill, **talk**: *Separating Planck Bolometers and Beams via Simulated Planet Observations*, Summer Undergraduate Research (SURF) Final Presentations. California Institute of Technology, Pasadena, CA, August 2011

K. W. Schultz, K.M. Huffenberger, **poster**: *Stacking Catalog Sources in WMAP Data* , 217th Meeting of the American Astronomical Society. Seattle, WA, January 2011

Teaching & Tutoring

Department of Physics, **University of California, Davis**
Teaching Assistant 2012 → 2013

Department of Biology, **Barry University**, Miami Shores, FL
Physics and Math tutor 2012

Department of Physics, **University of Miami**
Physics Lab tutor 2011 → 2012

Department of Mathematics, **University of Miami**
Math Lab tutor 2009 → 2010

Honors & Awards

Winner of an Outstanding Student Paper Award in Natural Hazards December 2014
Awarded to top 3-5% of presenters in each section at the American Geophysical Union 2014 fall meeting

Member, Omicron Delta Kappa 2011
One of the highest collegiate honors along with Phi Kappa Phi and Phi Beta Kappa

Isaac Bashevis Singer Scholarship 2008 → 2012
Full academic scholarship to the University of Miami (UM), 30 annually.

Foote Fellow 2008 → 2012
Highest academic honor at UM, fellows freely design their curriculum, 50 annually

NSF CSMS Scholarship 2010
NSF Computer Science and Mathematics for Scientists, 5 annually at UM

Beyond the Book Scholarship 2010
Supported summer research, UM College of Arts and Sciences, 12 annually

National Ocean Scholarship 2008 → 2010
Awarded by the Consortium for Ocean Leadership, 4 in the U.S. annually

Computing Skills

Languages: Proficient in Python, R, C++, LaTeX, Bash. Experience with SWIG, SQL, HTML, Java
Modules & Libraries: Proficient with Git, Matplotlib, Numpy, Scipy

Study Abroad

Summer 2009: ACC Summer Study Abroad in China and Vietnam.
Studied environmental science, policy, and toxicology at:

- **South China Agricultural University**, Guangzhou, China.
- **Yunnan University**, Kunming, China.
- **Hanoi University of Mining and Geology**, Hanoi, Vietnam.