# Samuel W. Bell

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### EDUCATION

- PhD in Earth, Environmental, and Planetary Science, Brown University, 2016
- Masters of Earth, Environmental, and Planetary Science, Brown University, 2014
- Bachelors of Astronomy and Geology (double major), Amherst College, 2011

## WORK EXPERIENCE

- Associate Research Scientist, Planetary Science Institute, January 2020 to present
- Rhode Island State Senator, District Five, January 2019 to present
- Data Scientist, Brown University, October 2017 to January 2020.
- Postdoctoral Research Associate, University of Rhode Island, September 2016 to October 2017
- Graduate Research/Teaching Assistant, Brown University, August 2011 to September 2016
- Applied Physics Laboratory Space Research-Exploration Intern, Summers 2010 and 2011
- Laboratory Assistant for Dr. Darby Dyar, Winter and Fall 2010
- Lunar and Planetary Institute Intern, Summer 2009
- Massachusetts Space Grant Intern, Summer 2008

### **Research Interests**

- Impact cratering and solar system chronology
- Machine learning and data science
- Passive source seismology
- Methods development
- Icy bodies
- Plate tectonics
- Planetary surface processes

### SKILLS

- Computer languages: Python, Fortran, Mathematica, Matlab, IDL, Java
- Machine learning: Keras, Scikit-Learn
- GIS: GMT, ArcGIS, ISIS, GeoPandas
- Seismology: Seismic Analysis Code, tomography, interferometry
- Spoken languages: Spanish (fluent), French (conversational)

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### **PUBLICATIONS**

- Bell S., 2020, "Relative crater scaling between the major moons of Saturn: implications for planetocentric cratering and the surface age of Titan." *Journal of Geophysical Research*.
- **Bell S.**, Marlow T., Wombacher K., Hitt A., Parikh N., Zsom A., Frickel S., 2020, "Automated data extraction from historical city directories: the rise and fall of midcentury gas stations in Providence, RI." *PLOS One*.
- **Bell S.**, Spade D., Zsom A., 2020, "Automated identification of multinucleated germ cells with U-Net." *PLOS One*.
- Ruan, Y., Forsyth D. W., Bell S., 2018, "Shear attenuation beneath the Juan de Fuca plate: Implications for mantle flow and dehydration." *Earth and Planetary Science Letters*, 496, 189-197.
- Bell S., Ruan Y., Forsyth D. W., 2016, "Ridge asymmetry and deep aqueous alteration at the trench observed from Rayleigh wave tomography of the Juan de Fuca plate." *Journal of Geophysical Research*, 121.
- Bell S., Ruan Y., Forsyth D. W., 2015, "Shear velocity structure of abyssal plain sediments in Cascadia." *Seismological Research Letters*, *86*, 1247-1252.
- Bell S., Forsyth D. W., and Ruan Y., 2015, "Removing Noise from the Vertical Component Records of Ocean-Bottom Seismometers: Results from Year One of the Cascadia Initiative." *Bulletin of the Seismological Society of America*, 105.
- Ruan Y., Forsyth D. W., and Bell S., 2014, "Marine sediment shear velocity structure from the ratio of displacement to pressure of Rayleigh waves at seafloor." *Journal of Geophysical Research*, 119.
- Toomey D. R., Allen R. M., Barclay A. H., Bell S., Bromirski P. D., et al., 2014, "The Cascadia Initiative: A Sea Change in Seismological Studies of Subduction Zones." *Oceanography*, 27, 138-150.
- Bell S., Thomson B., Dyar M. D., Neish C., Cahill J., and Bussey D. B. J., 2012, "Dating small fresh lunar craters with Mini-RF radar observations of ejecta blankets." *Journal of Geophysical Research*, *117*, E00H30.
- Dyar M. D., Breves E., Emerson E., Bell S., Nelms M., et al., 2012, "Accurate determination of ferric iron in garnets by bulk Mössbauer spectroscopy and synchrotron micro-XANES," *American Mineralogist*, 97, 1726-1740.
- Grew E., Marsh J., Yates M., Lazic B., Armbuster T., Locock A., Bell S., Dyar M.D., Bernhardt H., and Medenbach O., 2010, "Menzerite-(Y), a new garnet species, {(Y, REE)(Ca,Fe<sup>2+</sup>)<sub>2</sub>} [(Mg,Fe<sup>2+</sup>)(Fe<sup>3+</sup>,Al)](Si<sub>3</sub>)O<sub>12</sub>, from a felsic granulite, Parry Sound, Ontario, and a new garnet end member, {Y<sub>2</sub>Ca}[Mg<sub>2</sub>](Si<sub>3</sub>)O<sub>12</sub>." *The Canadian Mineralogist*, 48, 1171-1193.

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 Lasue J., Stepinski T., and Bell S. 2010. "Automated classification of interplanetary dust particles: JSC Cosmic Dust Catalog Volume 15." *Meteoritics and Planetary Science*, 45, 783-797.

### PRESENTATIONS

- Bell S., Ruan Y., and Forsyth D. W., 2015, "Portrait of Juan de Fuca from ridge to trench: Serpentinization and ridge asymmetry," presented at the AGU 2015 Fall Meeting, San Francisco, CA.
- Bell S., Ruan Y., and Forsyth D. W., 2014, "Rayleigh Wave Tomography of Noise-Removed Cascadia Data," presented at the AGU 2014 Fall Meeting, San Francisco, CA.
- Bell S., Forsyth D. W., and Ruan Y., 2014, "Comparison of Long-Period Noise on Vertical Component OBS Records from Cascadia," presented at the Amphibious Array Facility Conference, Snowbird, UT.
- **Bell S.**, Forsyth D. W., and Ruan Y., 2013, "Water Wave Noise in Ocean Bottom Seismometers," presented at the AGU 2013 Fall Meeting, San Francisco, CA.
- Bell S., Ruan Y., and Forsyth D. W., 2013, "Apparent tilt of the vertical as a function of time in year one OBSs," presented at the OBS Instrument Pool Meeting, Redondo Beach, CA.
- **Bell S.**, Schultz P., 2012, "Detection of a radar signature of the uprange plume in fresh oblique lunar craters," Lunar and Planetary Science Conference 2012, Houston, TX.
- Bell S., Forsyth D. W., and Ruan Y., 2015, "Removing noise from the Vertical Component Records of Ocean-Bottom Seismometers: Results from Year One of the Cascadia Initiative." *Bulletin of the Seismological Society of America*, 105.
- Bell S., Thomson B. J., Dyar M. D., and Bussey D. B. J., 2011, "Dating fresh lunar craters with Mini-RF."
- Bell S., Lasue J., and Stepinski T., 2010, "Automated Classification of Stratospheric Dust."