

PATRICIA G. MACQUEEN

Citizenship: United States
Languages Spoken: English (native), Spanish (fluent)

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EDUCATION

Master of Science, Simon Fraser University, Burnaby, B.C., Canada, 2011-2014

“*Geophysical Investigations of Magma Plumbing Systems at Cerro Negro Volcano, Nicaragua*”

Bachelor of Science with Honors, Magna cum Laude, University of Oregon, Eugene, OR, 2007-2011

“*Forward Modeling to Assess and Improve Gravity Network Geometry at Kilauea Volcano, Hawai`i*”

Cherry Creek High School, Greenwood Village, CO, 2003-2007

WORK EXPERIENCE

Geophysical Consultant,
MacQueen Geophysical
Consulting, 2017-2018

Founder and principal consultant. Analysis of geophysical data and test methodology for geophysical instrumentation development.

Geophysicist, Micro-g
LaCoste, 2014 to 2017

Gravity data analysis, time-lapse feasibility studies

Geophysics Intern,
Micro-g LaCoste, 2014

Gravity data analysis, gravity modeling and inversion, development of gravimeter instrument specifications

Teaching Assistant, 2013

Taught senior (4th year) level volcanology lab

Teaching Assistant, 2012

Taught introductory level geology lab

Hawaiian Volcano

Observatory, Summer 2010

Gravity surveys on Kilauea, Mauna Loa, and Mauna Kea calibration line, gravity data reduction, PhotoModeler 3-D model of Hale`uma`u pit crater, basis for senior thesis research studying effectiveness of gravity station distribution at Kilauea's summit area

Cashman Volcanology Lab,
2008-2010

Grain size analysis, componentry, tortuosity measurements of volcanic samples

IRIS Seismology Internship,
Summer 2009

Installation and maintenance of two seismic networks, research on low frequency earthquakes, poster presentation at 2010 SSA meeting

PUBLICATIONS AND PRESENTATIONS

Publications

MacQueen, P., Zurek, J., Williams-Jones, G. (2016). Geophysical investigations of Cerro Negro volcano, Nicaragua: Insights on magmatic plumbing systems. *Journal of Volcanology and Geothermal Research*. pp. 375-384. <http://dx.doi.org/10.1016/j.jvolgeores.2016.09.002>.

MacQueen, P., Hugill, A., Billson, R., Constantino, A., MacQueen, J., Niebauer, T. (In Prep). Down conversion of seismic noise in gravity meters. *Metrologia*.

MacQueen, P. (2011). Forward Modeling to Assess and Improve Gravity Network Geometry at Kilauea Volcano, Hawai`i. *Oregon Undergraduate Research Journal*, 1(1), 24-44.

Presentations

MacQueen, P., Delgado, F., Reath, K., Pritchard, M., Lundgren, P., Milillo, P., Macedo, O., Aguilar, V., Zerpa, I., Machacca, R., Miranda, R. (2018). Volcano-tectonic interactions at Sabancaya volcano, Peru (2013-2018): Eruptions, magmatic inflation, moderate earthquakes, and aseismic slip. *2018 AGU Fall Meeting*. Abstract.

MacQueen, P., Delgado, F., Pritchard, M., Amelung, F., Arnold, D., Biggs, J., Ebmeier, S., Henderson, S., Poland, M., Sansosti, E., Wauthier, C. (2018). Satellite-based monitoring of long term and rapidly changing volcano deformation: Updated results from the CEOS Latin America Pilot Project. *2018 UNAVCO Science Workshop*. Abstract.

MacQueen, P., Hugill, A., Billson, R., Constantino, A., MacQueen, J., Niebauer, T. (2015). Down Conversion of Ambient Seismic Noise As A Tool To Detect Non-Linearity And Estimate Instrument Noise Levels In A Gravity Meter. Abstract G11B-0975. 2015 AGU Fall Meeting. (Outstanding Student Presentation Award)

MacQueen, P., Williams-Jones, G., Zurek, J.. (2013). Geophysical Investigations of Cerro Negro Volcano, Nicaragua: Insights on magmatic plumbing systems. *International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI) 2013 Scientific Assembly*. Abstract.

- MacQueen, P., Cashman, K., Poland, M., Schmidt, D., Williams-Jones, G. (2012). Using Forward Modeling to Optimize the Geometry of Geophysical Networks at the Summit of Kilauea Volcano: A Matter of Great Gravity. *AGU Chapman Conference on Hawaiian Volcanoes: From Source to Surface*. Abstract.
- MacQueen, P. (2011). Geophysical Methods in Volcanology. *Guest Lecture at La Universidad de Colima, November 2011*.
- MacQueen, P. (2011). Using Forward Modeling to Optimize the Geometry of Geophysical Networks at the Summit of Kilauea Volcano: A Matter of Great Gravity. *University of Oregon Undergraduate Symposium*. Abstract.
- MacQueen, P., Gombert, J., Schulz, W., Bodin, P., Foster, K., Kean, J., & Creager, K. (2010). Investigating Low Frequency Impulsive Events at Slumgullion Landslide. *Seismological Society of America Annual Meeting 2010*. Abstract.
- Bodin, P., Schulz, W.H., Gombert, J.S., Kean, J.W., Coe, J.A., Wang, G., MacQueen, P., Foster, K. and Creager, K.. (2009) The Slumgullion Natural Laboratory: Overview of the 2009 Multidisciplinary Reconnaissance. *2009 AGU Fall Meeting*. Abstract.
- Gombert, J.S., Schulz, W.H., Bodin, P., Kean, J.W., Wang, G., Coe, J.A., MacQueen, P., Foster, K. and Creager, K.. (2009) The Slumgullion Natural Laboratory for Observing Slip Phenomena. *2009 AGU Fall Meeting*. Abstract.
- Schulz, W.H., Kean, J.W., Gombert, J.S., Bodin, P., Wang, G., Coe, J.A., MacQueen, P., Foster, K. and Creager, K.. (2009) The Slumgullion Natural Laboratory: Landsliding Mechanisms Inferred from Seismic and Geodetic Observations. *2009 AGU Fall Meeting*. Abstract.

AWARDS AND SCHOLARSHIPS

- Cornell Graduate Fellowship (2017/\$30,000)
- Outstanding Student Presentation Award, Geodesy, 2015 AGU Fall Meeting
- Society of Exploration Geophysicists Scholarship (2007, 2009-2012/ total \$23,500)
- C.D. Nelson Memorial Entrance Scholarship (2011-2012/\$15,000)
- Phi Beta Kappa (inducted 2012)
- Goldwater Scholarship (2010/\$7,500)
- Clarence and Lucille Dunbar Scholarship (2010/\$5,000)
- University of Oregon Merit Scholarship (2007-2008, 2010, total \$5,500)
- University of Oregon Deans List (2007 to 2010)
- Robert D. Clark Honors College Directors List (2007 to 2008)
- Western Undergraduate Exchange Scholarship (2007 - 2011/150% in-state tuition at University of Oregon)
- Commended National Merit Scholar (2007)
- National Honor Society (2004 to 2007)

VOLUNTEER WORK

- Snee Graduate Organization, Faculty Liaison, 2019
- Blue Bench Sexual Assault Crisis Hotline, 2017
- SEG Women's Network Committee, Deputy Chair, 2014 to 2016
- JASON STEM Q&A Interview, 2014
- "Science Alive" children's science camp presentation on volcanology, August 2013
- "Say Yes!" afterschool program at New Beginnings Baptist Church, 2012-2013
- 1st International Eco-theological Symposium, 2012
- AME BC Roundup Volunteer 2012 and 2013
- Geology Tutoring 2008-2011
- Highland Dance Teaching through the Eugene Highlanders Pipe Band, 2010-2011
- Public Geology Presentations (through the UO Geology Club) 2009-2011
- Teaching (Geology) at Spencer Butte Middle School, 2010
- Tutoring (Mathematics, Spanish) at Cherry Creek High School 2005-2007

SKILLS

Geophysical Surveying	Bouguer and 4-D gravity, total magnetic, passive seismic
Inversion Software	Grav3D and GROWTH
Programming/Code development	Matlab
Technical Software	Excel, Word, PowerPoint, Surfer, Global Mapper, Google Earth, CorelDraw
Languages Spoken	English (native), Spanish (fluent)

PROFESSIONAL ASSOCIATIONS

International Association of Volcanology and Chemistry of the Earth's Interior (2013 to present)
American Geophysical Union (2010 to present)
Geological Society of America (2009 to present)
Seismological Society of America (2009-2010)
Society of Exploration Geophysicists (2007 to present)

RESEARCH INTERESTS

Volcanology	4-D and Bouguer Gravimetry	Hazard Mitigation
InSAR	Survey Optimization	Exploration Geophysics
Inversion	Volcano Gravimetry	Geothermal Energy
Joint Inversion	Volcano Deformation	

EXTRACURRICULAR ACTIVITIES

SEG Women's Network Committee, Vice Chair, 2014 to 2016
Social Committee, SFU Earth Sciences Graduate Caucus, 2012 to 2013
UO Geology Club, Secretary, 2008 to 2011

REFERENCES

Name	Title	Phone/Email
Matthew Pritchard	Professor, Cornell University	(607) 255-4870/ pritchard@cornell.edu
Timothy Niebauer	CEO, Tellus Gravity	(303) 828-3499x302/ tmn@tellusgravity.com
Glyn Williams-Jones	Professor, Simon Fraser University	(778) 782-3306/ glynwj@sfu.ca