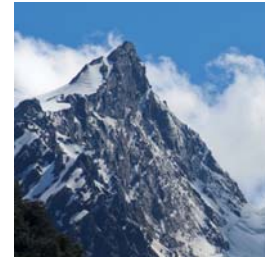


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## Education/Theses

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- **Ph.D. Geology** University of Otago, New Zealand May 2013  
*"A Tectono-Geomorphic Study of the Alpine Fault, New Zealand"*  
Distinguished as a 2013 Exceptional Thesis (top 10% of OU theses examined)  
Advisors: Prof. Richard Norris, Dr. Virginia Toy, Prof. Alan Cooper
- **M.Sc. Geological Sciences** University of California-Santa Barbara June 2008  
*"Strain in the Western Gneiss Region of Norway Recorded by Quartz LPOs"*  
Advisor: Prof. Brad Hacker
- **B.Sc. Geological Sciences** University of California-Santa Barbara March 2007  
High Honors and Distinction in the Major  
Year abroad at the University of Otago, New Zealand (2006)  
*"Geology of the South Branch of the Pareora and Otaio Rivers Region, Hunter Hills, Canterbury, New Zealand"* (Senior Thesis)  
Advisor: Prof. Rick Sibson

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## Publications

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- **Barth (2013)** "The Cascade rock avalanche: Implications of a very large Alpine Fault-triggered failure, South Westland, New Zealand," *Landslides*, doi: 10.1007/s10346-013-0389-1
- **Barth (2013)** "Caves of Otago," Special Issue of the *New Zealand Speleological Bulletin*, vol. 11(206), 37 pp., ISSN-0110-621X
- **Barth et al. (2013)** "New c. 270 kyr strike-slip and uplift rates for the southern Alpine Fault and implications for the New Zealand plate boundary," *Journal of Structural Geology* Special Issue: *Continental Transpressive Fault Zones*, doi: 10.1016/j.jsg.2013.08.009
- **Barth et al. (2013)** "Slip localization on the southern Alpine Fault, New Zealand," *Tectonics*, doi: 10.1002/tect.20041
- **Barth et al. (2012)** "Scale dependence of oblique plate-boundary partitioning: New insights from LiDAR, central Alpine fault, New Zealand," *Lithosphere*, doi: 10.1130/L201.1 (Most read Lithosphere article – December 2012)
- **Barth et al. (2010)** "Strain within the Ultrahigh-Pressure Western Gneiss Region of Norway Recorded by Quartz CPOs," *Continental Tectonics and Mountain Building: the Legacy of Peach and Horne*, Geological Society of London, doi: 10.1144/SP335.27
- **Langridge et al. (accepted)** "Developing and interpreting sub-5m LiDAR DEMs along forested parts of the Alpine and Hope faults, South Island, New Zealand,"

- **Barth (in preparation)** “Main divide capture in a tectonically-active orogen, Southern Alps, New Zealand”

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### Professional Experience

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- **Science Instructor** for Upward Bound Program, New Mexico Tech 2013
- **Geological Consultant** for GNS Science, interpreted LiDAR data for the central Alpine Fault, New Zealand 2011
- **Teaching Fellow**, University of Otago- Department of Geology 2010-2011
- **Graduate Student Researcher** and **Teaching Assistant**, UCSB 2007-2008
- **Consulting Geologist** for BreitBurn Energy Company, Ltd., mapped detailed field geology of S. Orcutt Hill Oil Field, Santa Maria, CA 2007
- **Lab Technician**, UCSB Geological Sciences 2005

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### Teaching

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- Geology, Upward Bound, New Mexico Tech, **Science Instructor** 2013
- Structural Analysis of Deformed Rocks (Geol 351), **Teaching Fellow** 2010 & 2011
- Advanced Field Studies (Geol 302), **Teaching Fellow** 2010 & 2011
- Sedimentary Processes and Materials (Geol 273/373), **Student Demonstrator** 2009
- Structural Analysis of Deformed Rocks (Geol 351), **Student Demonstrator** 2009
- Field Studies and New Zealand Geology (Geol 252), **Student Demonstrator** 2009
- Spring Field (Geol 104B), field-based class, **Teaching Assistant** 2008
- Igneous Petrology (Geol 102B), **Instructional Aide** 2008
- Earth Materials (Geol 114A), **Teaching Assistant** 2007
- Earth Materials (Geol 114A & B), **Course Designer**, 300+ hours 2007
  - Created course materials, labs, lectures, websites; chose textbooks
- Geology of Yosemite (Geol 19), field-based class, **Teaching Assistant** 2007
- Geology of Death Valley (Geol 18), field-based class, **Teaching Assistant** 2007

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### Outreach & Community Service

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- **Sciences Outreach Certificate** in recognition of > 60 hours of geology-related public outreach, Division of Sciences, University of Otago 2009-2012
- **Conservation & Research Officer** for the New Zealand Speleological Society addressing national issues pertaining to proposed infrastructure development on karst, illegal trade of fossil bones from public lands, and the protection of caves 2010-2012
- **Speaker** on geology, caving and UC Education Abroad Program at various community/non-profit clubs and events 2010-2011
- **Hands-on teacher/guide** for 1<sup>st</sup>-8<sup>th</sup> grade students about geology at various UCSB-affiliated events and school science fairs, > 50 hours 2004-2008

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## Honors & Awards

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National Geographic Society

- **National Geographic Young Explorer Grant** for Ph.D. fieldwork 2010

University of Otago

- **Otago Postgraduate Scholarship** for a Ph.D. in geology 2009-2011

University of California- Santa Barbara

- **Teaching Assistant of the Year** awarded by UCSB geology undergraduates 2008
- **Preston Cloud Award** for talk at the 2007 GSA annual conference in Denver 2008
- **Fugro West Scholarship** for “educational excellence in engineering geology and marine geophysics” 2007
- **George Tunell Endowed Fellowship** for “special interest in economic geology, mineralogy, crystallography, geochemistry or petrology” 2007
- **UC Instructional Development Grant** to create 2 new Earth Materials classes 2007
- **Robert M. Norris Prize in Field Geology** for “educational excellence in geological field mapping” 2005

Coast Geological Society

- **John Woolley Memorial Undergraduate Scholarship** 2006

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## Technical Experience

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### Technical Skills:

- Scanning Electron Microscope (SEM), Electron Backscatter Diffractometer (EBSD), Energy-Dispersive X-ray spectroscopy (EDS), X-Ray Diffractometer (XRD)
- Interpretation of stereopair aerial photographs, LiDAR and differential InSAR imagery
- Tools accessible through colleagues:  $^{40}\text{Ar}/^{39}\text{Ar}$  radiometric dating, carbonate C/O stable isotopes, amino acid racemization dating, rotary shear and double direct shear friction apparatus, SEM/EBSD/EDS/XRD
- Core logging, water conductivity testing, gravitometer, shallow-ground conductivity, basic interpretation of geophysical data, optical microscopy
- Adobe Creative Suite, Microsoft Office suite, ArcGIS suite, MapInfo

### Field Experience:

- First descent of Gloomy Gorge, New Zealand’s most technical canyon, New Zealand Geographic cover article Sept-Oct 2013 2013
- Fieldwork for Ph.D. thesis in remote South Westland, New Zealand mapping and sampling on and near the Alpine Fault Zone;  $\leq 8$  day backpacking trips, logistics included helicopter/Cessna/jetboat,  $> 3$  months 2009-2012
- Explored, mapped and studied the world’s longest sea cave near Dunedin, New Zealand,  $> 2$  weeks 2012
- Key participant in over a half dozen exploration and survey-focused cave expeditions in New Zealand, the United States and Borneo,  $> 3$  months 2008-2012
- Expedition leader for 2011 NZ/US Fiordland Caving Expedition, 2 weeks 2011
- Field Assistant in the Red Hills Ultramafic Massif, New Zealand, 2 weeks 2009
- Traverse of the Grand Canyon of the Colorado by raft and foot, 23 days 2008
- Surveying and exploring in Lechuguilla Cave, NM, 7 days trip underground 2008

- Fieldwork for Senior Thesis (B.Sc.) in Canterbury, New Zealand, 2 weeks 2006
- Field mapping in Central Otago, New Zealand, 2 weeks 2006
- Field Assistant in the Austrian Alps, 6 weeks 2005
- Field Assistant in the Mojave Desert near Barstow, CA, 1 week 2005
- Field mapping in the White Mtns and Mammoth Lakes region, CA, 3 weeks 2005
- Volunteer for Cave Restoration Foundation (CRF) and National Park Service (NPS) at Sequoia & Kings Canyon National Parks, > 4 months 2001-2008

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### **Affiliations**

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- Student Member of the AusIMM New Zealand Branch 2012-present
- Student Member of the Geoscience Society of New Zealand (GSNZ) 2009-present
- Student Member of the American Geophysical Union (AGU) 2009-present
- Student Member of the Geological Society of America (GSA) 2005-2010
- Member of the New Zealand Speleological Society (NZSS) 2009-present
- Member of the National Speleological Society (NSS) 2007-present
- Member of the National Geographic Society (NGS) 1994-present

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### **Personal Interests**

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- Caving, photography, canyoning, rock climbing, kayaking, coasteering, backpacking

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### **Future Endeavors**

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- Publish a journal article currently in preparation on Ph.D. research
- Work on New Zealand Geographic magazine article on active research into Alpine Fault hazards and tectonics