

Nicolas C. Barth, Ph.D., P.G.

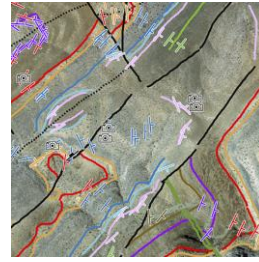
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California Professional Geologist #9904

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EDUCATION

| | | |
|----------------------------------|---|----------|
| Ph.D. Geology | University of Otago – New Zealand <i>"A Tectono-Geomorphic Study of the Alpine Fault, N.Z."</i> Distinguished as a 2013 Exceptional Thesis (top 10%) Advisors: Virginia Toy, Richard Norris, Alan Cooper, Simon Cox | May 2013 |
| M.Sc. Geological Sciences | University of California – Santa Barbara <i>"Strain in the Western Gneiss Region of Norway Recorded by Quartz LPOs"</i> Advisor: Brad Hacker | Jun 2008 |
| B.Sc. Geological Sciences | University of California – Santa Barbara High Honors, Distinction in the Major, Senior Thesis <i>"Geology of the South Branch of the Pareora and Otaio Rivers Region, Hunter Hills, Canterbury, NZ"</i> Advisor: Rick Sibson | Mar 2007 |

POSITIONS

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|------------------------------|--|--------------|
| Associate Professor | University of California – Riverside (UCR) | 2023–present |
| Assistant Professor | University of California – Riverside (UCR) | 2014–2023 |
| Geological Consultant | Native American Land Conservancy (non-profit) | 2022 |
| Geoscience Consultant | Planet 3 – fact-checked middle school geoscience modules | 2016 |
| Science Instructor | New Mexico Tech – Upward Bound Program (NMT) | 2013 |
| Geological Consultant | GNS Science, Alpine Fault LiDAR data, New Zealand | 2011 |
| Consulting Geologist | BreitBurn Energy Company, Ltd. – Santa Maria, CA | 2007 |

PUBLICATIONS

For detailed analytics see [Google Scholar page](#). Citations (776), h-index (16), i10-index (18)

* advised graduate student

advised undergraduate student

31. Guilinger, J.J.*, Foufloula-Georgiou, E., Gray, A.B., Randerson, J., Smyth, P., **Barth, N.C.**, Goulden, M. (*in revision*) Predicting postfire erosion: from channel loading to evacuation and later-stage mass wasting. *Geophysical Research Letters*.
30. Guilinger, J.J.*, Gray, A.B., **Barth, N.C.** (*in revision*) Increasing fire frequency reduces channel sediment supplies in steep shrubland-dominated headwater catchments. *Geomorphology*.

29. Dawson, T., DuRoss, C.B., Gold, R., Scharer, K., Ponti, D., Ladinsky, T., Langenheim, V.E., McPhillips, D., Morelan, A., Milliner, C., Kendrick, K., Hernandez, J., Hudnut, K., Akciz, S., Angster, S., Avouac, J.-P., Bacon, S., Bachhuber, J., **Barth, N.C.**, +52 authors. (*in revision*). Field-based observations of surface ruptures associated with the 2019 Ridgecrest earthquake sequence. *Bulletin of the Seismological Society of America*.
28. Toy, V.G., **Barth, N.C.**, Bond, C.E., McLaren, S. (2023) Virtual and Digital Geology Introduction., *Journal of Structural Geology*, 168, doi: [10.1016/j.jsg.2023.104821](https://doi.org/10.1016/j.jsg.2023.104821)
27. Stanton, T.W., Arden, T., **Barth, N.C.**, Diaz, J.F., Miller, S.J., Taube, K.A., Rohrer, P., Beckner, E., Magnoni, A. (2023) Chapter 4: Roads, temples, and the community boundaries of Coba, Quintana Roo. "*The Ties that Bind and the Walls that Divide: Prehistoric to Contemporary Maya Manipulation of Social Space*" University of Arizona Press.
26. Swiatlowski, J. L.*, Funning, G. J., **Barth, N. C.** (2022) Monitoring creep along the Hayward Fault using structure-from-motion photogrammetry of offset curbs. *Geophysical Journal International*, 230(3), 1788–1799. doi: [10.1093/gji/ggac145](https://doi.org/10.1093/gji/ggac145)
25. Kendrick, K., Matti, J., **Barth, N.C.** (2022) Geologic and geomorphic evidence for multi-phase history of strands of the San Andreas Fault through the San Geronio Pass structural knot, southern California. *Geosphere*. doi: [10.1130/GES02424.1](https://doi.org/10.1130/GES02424.1)
24. **Barth, N.C.**, Stock, G.M., Atit, K. (2022) From Virtual Field Trip to Geologically-Reasoned Decisions in Yosemite Valley. *Geoscience Communication*. 5, 17-28. doi: [10.5194/gc-5-17-2022](https://doi.org/10.5194/gc-5-17-2022)
23. Stanton, T.W., Tsukamoto, K., Fernandez-Diaz, J.C., **Barth, N.C.** (2021) El Lidar en Mesoamerica. *Arqueologia Mexicana*, no. 166, pp. 82-87.
22. Kyriakopolous, C., **Barth, N.C.**, Koelemeijer, P., Winterbourne, J., Toussaint, R. (2021) 3D printing in geology and geophysics: a new world of opportunities in research, outreach, and education. *Frontiers in Earth Science*. v. 9, 1-2. doi: [10.3389/feart.2021.734291](https://doi.org/10.3389/feart.2021.734291)
21. Hutson, S.R., Dunning, N.P., Cook, B., Ruhl, T., **Barth, N. C.**, Conley, D. (2021) Ancient Maya Rural Settlement Patterns, Household Cooperation, and Regional Subsistence Interdependency in the Río Bec Area: Contributions from G-LiHT. *Journal of Anthropological Research*, 550–579. doi: [10.1086/716750](https://doi.org/10.1086/716750)
20. Hutson, S.R., Hare, T.S., Stanton, T.W., Masson, M.A., **Barth, N.C.**, Ardren, T., Magnoni, A. (2021) A space of One's own: Houselot size among the ancient Maya. *Journal of Anthropological Archaeology*, 64, 101362. doi: [10.1016/j.jaa.2021.101362](https://doi.org/10.1016/j.jaa.2021.101362)
19. Howarth, J.D., **Barth, N.C.**, Fitzsimons, S.J., Richards-Dinger, K., Clark, K.J., Biasi, G.P., ... Sutherland, R. (2021). Spatiotemporal clustering of great earthquakes on a transform fault controlled by geometry. *Nature Geoscience*, 14(5), 314–320. doi: [10.1038/s41561-021-00721-4](https://doi.org/10.1038/s41561-021-00721-4)
18. Ponti, D.J., Blair, J.L., Rosa, C.M., Thomas, K., Pickering, A.J., Akciz, S., Angster, S., Avouac, J.-P., Bachhuber, J., Bacon, S., **Barth, N.C.**, and 66 co-authors (2020) Documentation of Surface Fault Rupture and Ground-Deformation Features Produced by the 4 and 5 July 2019 Mw 6.4 and Mw 7.1 Ridgecrest Earthquake Sequence. *Seismological Research Letters*, 91(5), 2942–2959. doi: [10.1785/0220190322](https://doi.org/10.1785/0220190322)
17. Nourse, J.A., Swanson, B.J., Lusk, A.D., **Barth, N.C.**, Schwartz, J. J., & Vermillion, K. B. (2020) Recent advancements in geochronology, geologic mapping, and landslide characterization in basement rocks of the San Gabriel Mountains block. *From the Islands to the Mountains: A 2020 View of Geologic Excursions in Southern California*, 21–93. doi: [10.1130/2020.0059\(02\)](https://doi.org/10.1130/2020.0059(02))

16. Stanton, T.W., Ardren, T., **Barth, N.C.**, Fernandez-Diaz, J.C., Rohrer, P., Meyer, D., Magnoni, A., Pérez, M. (2020) “Structure” density, area, and volume as complementary tools to understand Maya Settlement: An analysis of lidar data along the great road between Coba and Yaxuna. *Journal of Archaeological Science: Reports*, 29, 102178. doi: [10.1016/j.jasrep.2019.102178](https://doi.org/10.1016/j.jasrep.2019.102178)
15. Guilinger, J.J.*, Gray, A.B., **Barth, N.C.**, Fong, B.T.# (2020) The Evolution of Sediment Sources Over a Sequence of Postfire Sediment-Laden Flows Revealed Through Repeat High-Resolution Change Detection. *Journal of Geophysical Research: Earth Surface*, 125(10). doi: [10.1029/2020JF005527](https://doi.org/10.1029/2020JF005527)
14. Boulton, C., **Barth, N.C.**, Moore, D.E., Lockner, D.A., Townend, J., Faulkner, D.R. (2018) Frictional properties and 3-D stress analysis of the southern Alpine Fault, New Zealand. *Journal of Structural Geology*, 114, 43–54. doi: [10.1016/j.jsg.2018.06.003](https://doi.org/10.1016/j.jsg.2018.06.003)
13. Toy, V.G., Sutherland, R., Townend, J., ...**Barth, N.C.** and the DFDP-2B Science Team (2017) Bedrock Geology of the DFDP-2, Central Alpine Fault, New Zealand. *New Zealand Journal of Geology & Geophysics*. 22p. doi: [10.1080/00288306.2017.1375533](https://doi.org/10.1080/00288306.2017.1375533)
12. Townend, J., Sutherland, R., Toy, V. G., Doan, M.-L., Célérier, B., Massiot, C., ...**Barth, N.C.** and the DFDP-2B Science Team. (2017) Petrophysical, Geochemical, and Hydrological Evidence for Extensive Fracture-Mediated Fluid and Heat Transport in the Alpine Fault’s Hanging-Wall Damage Zone. *Geochemistry, Geophysics, Geosystems*, 18(12), 4709–4732. doi: [10.1002/2017GC007202](https://doi.org/10.1002/2017GC007202)
11. Sutherland, R., Townend, J., Toy, V.G., Upton, P., ...**Barth, N.C.** and the DFDP-2B Science Team (2017) Extreme hydrothermal conditions at an active plate-bounding fault. *Nature*. 4p. doi: [10.1038/nature22355](https://doi.org/10.1038/nature22355)
10. Magnoni, A., Stanton, T.W., **Barth, N.C.**, Fernandez Diaz, J., Osorio León, J., Pérez Ruíz, F., Wheeler, J.A. 2016. Detection Thresholds of Archaeological Features in Airborne LiDAR Data from Central Yucatán. *Advances in Archaeological Practice*. Vol. 4: 3 p.232-248. doi: [10.7183/2326-3768.4.3.232](https://doi.org/10.7183/2326-3768.4.3.232)
9. Stephens, S., MacKenzie, D., **Barth, N.C.**, Craw, D. (2015) Links between orogenic and placer gold on the Old Man Range, Central Otago, New Zealand. *New Zealand Journal of Geology & Geophysics*. 16p. doi: [10.1080/00288306.2015.1070181](https://doi.org/10.1080/00288306.2015.1070181)
8. Robinson, T., Davies, T., Wilson, T., Orchiston, C., **Barth, N.C.** (2015) Evaluation of coseismic landslide hazard on the proposed Haast-Hollyford Highway, South Island, New Zealand. *Georisk*. 18p. doi: [10.1080/17499518.2015.1077974](https://doi.org/10.1080/17499518.2015.1077974)
7. **Barth, N.C.**, Kulhanek, D.K., Beu, A.G., Murray-Wallace, C.V., Hayward, B.W., Mildenhall, D.C., Lee, D.E. (2014) 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*. Vol. 64: p.39-52. doi: [10.1016/j.jsg.2013.08.009](https://doi.org/10.1016/j.jsg.2013.08.009)
6. Langridge, R.M., Ries, W.F., Farrier, T., **Barth, N.C.**, Khajavi, N., De Pascale, G.P. (2014) Developing sub 5-m LiDAR DEMs for forested sections of the Alpine and Hope faults, South Island, New Zealand: Implications for structural interpretations. *Journal of Structural Geology*. Vol. 64: p.53-66. doi: [10.1016/j.jsg.2013.11.007](https://doi.org/10.1016/j.jsg.2013.11.007)
5. **Barth, N.C.** (2014) Lidar reveals uniform Alpine fault offsets and bimodal plate boundary rupture behavior, New Zealand: COMMENT. *Geology*. Vol. 42: p.e349. doi: [10.1130/G35816C.1](https://doi.org/10.1130/G35816C.1)
4. **Barth, N.C.** (2013) The Cascade rock avalanche: implications of a very large Alpine Fault-triggered failure, New Zealand. *Landslides*. 15p. doi: [10.1007/s10346-013-0389-1](https://doi.org/10.1007/s10346-013-0389-1)

3. **Barth, N.C.**, Boulton, C., Carpenter, B.M., Batt, G.E., Toy, V.G. (2013) Slip localization on the southern Alpine Fault, New Zealand. *Tectonics*. Vol. 31: p.1-21. doi: [10.1002/tect.20041](https://doi.org/10.1002/tect.20041)
2. **Barth, N.C.**, Toy, V.G., Langridge, R.M., Norris, R.J. (2012) Scale dependence of oblique plate-boundary partitioning: New insights from LiDAR, central Alpine fault, New Zealand. *Lithosphere*. Vol. 4: 5 p.435-448. doi: [10.1130/L201.1](https://doi.org/10.1130/L201.1)
1. **Barth, N.C.**, Hacker, B.R., Seward, G.G., Walsh, E.O., Young, D., Johnston, S. (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, Special Publications. p.663-685. doi: [10.1144/SP335.27](https://doi.org/10.1144/SP335.27)

ABSTRACTS

* advised graduate student

advised undergraduate student

57. **Barth, N. C.** (2022) On the interaction of active faults and bedrock landslides. 2022 SCEC Annual Meeting. [Poster](#)
56. **Barth, N.C.** (2021) Creating virtual field trips with Google Earth Web. UC GIS Week 2021 Nov. 16-18th. Talk
55. Mere, A.*, **Barth, N.C.**, Kylander-Clark, A.R.C. (2021) Insights into the tectonic evolution of the southern Alpine Fault from mapping, petrography, and zircon U-Pb geochronology at Kaipo River, New Zealand. 2021 Geological Society of America Annual Meeting. Abstract 127-10. Poster
54. Guilinger, J.J.*, Gray, A.B., **Barth, N.C.** (2021) Timescale between fires is an important control on postfire channel erosion in steep headwater catchments. 2021 AGU Fall Meeting, GC21C-05. Talk
53. **Barth, N.C.** (2020) Current advances and future potential of digital field mapping. UC GIS Week 2020 November 17-19th. Talk
52. Mere, A.M.*, **Barth, N.C.** (2020) GIS-based geologic mapping and analysis of the Kaipo Melange and southern Alpine Fault. UC GIS Week 2020 November 17-19th. Poster
51. **Barth, N.C.**, Gentile, C.* (2020) Ages, Geologic Controls, and Landscape Effects of Rock Avalanches in Southern California. 2020 GSA Annual Meeting. Presentation T132.17-4. Oct. 2020. [Talk](#)
50. Guilinger, J.J.*, Gray, A.B., **Barth, N.C.** (2020) Geologic and aspect-driven controls on post-fire sediment export from steep headwater catchments. 2020 AGU Fall Meeting, abstract #H087-0020. Poster
49. Toy, V., Schuck, B., Matsumura, R., Orchiston, C., **Barth, N.C.**, Stirling, M. (2020) Scientific basis for definition of a fault rupture hazard in Franz Josef Glacier, New Zealand, and the fight to see use made of this information. 2020 European Geophysical Union General Assembly, Vienna, Austria, 3-8 May 2020. Talk.
48. Lara, J.#, Ford, H., **Barth, N.C.** (2019) Characterization of Gravity Anomalies on the Wyoming Craton. UCR GIS Day, 14 November 2019. Poster
47. Churchill, M.#, Ford, H., **Barth, N.C.** (2019) Locating seismic activity in the Powder River Basin. UCR GIS Day, 14 November 2019. Poster

46. Stanton, T.W., Arden, T., **Barth, N.C.**, Fernandez-Diaz, J.C., Rohrer, P., Magnoni, A. (2019). Lidar survey in the Coba/Yaxuna corridor: Implications for understanding urban and rural settlement along Sacbe 1. XI Congreso Internacional de Mayistas, Chetumal. Talk
45. Stanton, T.W., Arden, T., **Barth, N.C.**, Fernandez-Diaz, J.C., Roher, P., Miller, S.J., Meyer, D., Magnoni, A. (2019). A not so simple path: Settlement research along the Yaxuna-Coba Causeway. 8th Annual Maya at the Lago Conference, Davidson, N.C. April 2019. Talk
44. Howarth, J.D., **Barth, N.C.**, Fitzsimmons, S.J., Richards-Dinger, K., Clark, K., Cochran, U.A., Langridge, R.M., Berryman, K., Sutherland, R. (2019) Geometry causes temporal clustering of great earthquakes on a transform plate boundary. 2019 New Zealand Geosciences Conference. Plenary Talk
43. Guilinger, J.J.*, Gray, A.B., **Barth, N.C.** 2019 Seasonal shift of post-fire sediment provenance from channels to hillslopes documented through high-resolution monitoring. 2019 AGU Annual Meeting. Talk
42. Howarth, J., **Barth, N.C.**, Fitzsimmons, S., Richards-Dinger, K.B., Biasi, G.P., Clark, K., Cochran, U.A., Langridge, R.M., Berryman, K.R., Sutherland, R. (2019) Paleoseismology and simulations reveal geometry controls the temporal clustering of great earthquakes on the Alpine Fault, New Zealand. 2019 American Geophysical Union Annual Meeting, San Francisco, CA, 9-13 December 2019. Talk
41. Fong, B.T.#, Guilinger, J.J.*, **Barth, N.C.**, Gray, A.B. (2019) Hillslope boulder displacement from shallow landslides. 2019 AGU Annual Meeting, 9-13 December 2019. Abstract EP43D-2396. Poster
40. Guilinger, J.J.*, Gray, A.B., **Barth, N.C.** (2019) Strong scale dependence of erosion domains in post-fire headwater catchments. 2019 SoCal Geomorphology Conference, Scripps Institution of Oceanography, Talk
39. Fong, B.T.#, Guilinger, J.J., **Barth, N.C.**, Gray, A.B. (2019) Hillslope Boulder Displacement in the Box Springs Mountains, California. 2019 SoCal Geomorphology Conference, Scripps Institution of Oceanography, Poster
38. Guilinger, J.J.#, Gray, A.B., **Barth, N.C.** (2019) The evolution and depletion of sediment pools in a steep headwater catchment following wildfire as documented by high resolution change detection. 2019 Geological Society of America Annual Meeting, Phoenix, AZ, 20-25 September. Talk
37. **Barth, N.C.** (2019) Lidar revealed constraints on the southern Alpine Fault, New Zealand. 2019 American Geophysical Union Annual Meeting, San Francisco, CA, 9-13 December 2019. Abstract T41H-0347. Poster
36. Salazar, S.#, Funning, G., **Barth, N.C.** (2019) Examining the February 2018 Oaxaca, Mexico earthquake using InSAR. UCR Research in Science and Engineering (RISE) Symposium, Riverside, CA. Poster
35. Boulton, C., **Barth, N.C.**, Townend, J. (2018) Stress, Strength, and Earthquakes on the Alpine Fault. 2018 Taiwan-Japan-New Zealand Seismic Hazard Workshop, Oamaru, NZ. Talk
34. **Barth, N.C.**, Howarth, J., Richards-Dinger, K., Fitzsimmons, S., Biasi, G. (2018) Forecasting Earthquake Behavior on the Alpine Fault, New Zealand. 2018 SCEC Annual Meeting, Palm Springs, CA. Poster
33. Guilinger, J.J.*, Gray, A.B., **Barth, N.C.** (2018) Confinement or conveyance: characterization of post-wildfire sedimentological connectivity using repeat terrestrial LiDAR. 2018 AGU Annual Meeting. Poster
32. Jumps, N.I.#, Gray, A.B., **Barth, N.C.** (2017) An investigation into dominant post-wildfire erosion regimes using fallout radionuclides (¹³⁷Cs and excess ²¹⁰Pb). 2017 SoCal Geomorphology Symposium. Poster

31. Guilinger, J.J.*, Gray, A., **Barth, N.C.** (2017) Characterizing post-wildfire erosion in a steep headwater catchment using nested scales of topographic change detection. 2017 SoCal Geomorphology Symp, Poster
30. Pearson, J.*, **Barth, N.C.** (2017) Using lidar to elucidate the slip behavior of the southern Alpine Fault, New Zealand. 2017 Southern California Earthquake Center (SCEC) Annual Meeting, Palm Springs, CA. Poster
29. Leeper, R.*, **Barth, N.C.**, Gray, A. (2017) Analyzing postfire erosional processes and topographic change using hydrologic monitoring and repeat Structure-from-Motion photogrammetry at the storm event scale. 2017 American Geophysical Union Annual Meeting. Poster
28. Stanton, T.W., Magnoni, A., Wheeler, J.A., **Barth, N.C.**, Osorio León, J., Pérez Ruíz, F. (2017) Using Lidar and Ground Survey to Understand Regional Settlement Patterns in Terminal Classic Central Yucatan. Society for American Archaeology 2017 Annual Meeting. Talk
27. Guilinger, J.J.*, Gray, A., **Barth, N.C.**, Ajami, H., Leeper, R.* (2017) Using UAVs to characterize hillslope erosional responses in a burned catchment. UCR GIS Day, Riverside, CA. Poster
26. Janku-Capova, L., Sutherland, R., Townend, J., **Barth, N.C.**, and the DFDP-2B Science Team (2017). Quantitative Analysis of Thermal Anomalies in the DFDP-2B Borehole, New Zealand. 2017 EGU General Assembly. Talk
25. Gentile, C.*, **Barth, N.C.**, Steinmuller, H. (2017) Inventory and analysis of landslides in the Mojave Desert, CA. Desert Studies Center. 2017 Annual Desert Symposium, Zzyzx, CA. Poster
24. Toy, V.G., Billia, M., Easingwood, R., Kirilova, M., Kluge, E., Sauer, K., Sutherland, R., Timms, N., Townend, J., **Barth, N.C.**, and the DFDP-2B Science Team (2017) Can Multi-Scale Calibrations Allow MT-Derived Resistivities to be Used to Probe the Structure of the Deep Crust?. 2017 EGU General Assembly. Talk
23. Toy, V.G., **Barth, N.C.**, and the DFDP-2B Science Team (2017) Bedrock Geology of the DFDP-2 Drill-Site, Central Alpine Fault, New Zealand. 2017 European Geosciences Union (EGU) General Assembly. Talk
22. Kirilova, M., Toy, V.G., Timms, N., Halfpenny, A., Menzies, C., Craw, D., Beyssac, O., Rooney, J., Giorgetti, C., **Barth, N.C.**, and the DFDP-2B Science Team (2016) Transformation of graphite by tectonic and hydrothermal processes in an active plate boundary fault zone, Alpine Fault, New Zealand. 2016 European Geosciences Union General Assembly. Talk
21. Langridge, R.M., Ries, W.F., **Barth, N.C.**, Howarth, J., Quigley, M., Farrier, T. (2016) Assembling lidar swaths along the South Island plate boundary, New Zealand: The South Island 'b4' project. INQUA Focus Group on Paleoseismology and Active Tectonics, 7th International INQUA Meeting on Paleoseismology, Active Tectonics and Archeoseismology (PATA), Crestone, Colorado, USA. 05/30/2016. 4p. Talk
20. Leeper, R.*, **Barth, N.C.**, Gray, A. (2016) Analyzing the occurrence of debris flows and floods in a small watershed two years after a wildfire, San Gabriel Mountains, California. 2016 AGU Annual Meeting. Poster
19. Howarth, J., Cox, S.C., Sutherland, R., Langridge, R.M., Upton, P., **Barth, N.C.**, Atkins, C. (2015) Quaternary geology of the DFDP-2 drill holes, Alpine Fault, New Zealand. Geoscience Society of New Zealand 2015 Annual Meeting. Wellington, NZ. 11/25/2015. Talk
18. Cox, S.C., Howarth, J., Sutherland, R., Langridge, R.M., Upton, P., **Barth, N.C.**, Atkins, C. (2015) Quaternary geology of the DFDP-2 drill holes, Alpine Fault, New Zealand. 2015 AGU Annual Meeting. 12/15/2015. Talk

17. Sutherland, R., and 71 co-authors. (2015) Extreme Hydrothermal Conditions Near an Active Geological Fault, DFDP-2B Borehole, Alpine Fault, New Zealand. 2015 AGU Annual Meeting. 12/15/2015. Poster
16. **Barth, N.C.** (2014) New Zealand's Alpine Fault: Insights into the San Andreas Fault System. 2014 SCEC Annual Meeting. Palm Springs, CA. 09/14/2014. Poster
15. Boulton, C., Carpenter, B.M., **Barth, N.C.**, Toy, V.G. (2012) Mineralogy, microstructures, and frictional properties of weak fault core phyllosilicates, Alpine Fault, New Zealand. 2012 Gordon Research Conference: Feedback Processes in Rock Deformation. Andover, NH. 08/20/2012. Talk
14. Toy, V.G., Boulton, C., **Barth, N.C.**, Carpenter, B.M. (2012) What can microstructural observations of natural faults tell us about dissipative mechanisms that operated at the earthquake source?. Earthquake Source Physics on Various Scales Conference. Luxembourg. 10/03/2012. Talk
13. Ikari, M.J., Carpenter, B.M., Kopf, A.J., **Barth, N.C.**, Marone, C., Saffer, D.M., Oberhansli, R., Toy, V.G. (2012) Frictional behavior of the Alpine Fault, New Zealand, sampled from DFDP drilling and surface outcrops. Joint Colloquium of the Integrated Ocean Drilling Program (IODP) and the International Continental Scientific Drilling Program (ICDP). Kiel, Germany. 03/08/2012. Talk
12. Langridge, R.M., **Barth, N.C.**, De Pascale, G.P., Sutherland, R. (2012) The character of Holocene Alpine Fault deformation near DFDP-1 and DFDP-2 sites: Insights from LiDAR. Geosciences Society of New Zealand 2012 Annual Conference. Hamilton, NZ. 11/25/2012. Talk
11. Boulton, C., **Barth, N.C.**, Carpenter, B.M., Toy, V.G. (2012) Weak Fault Cores, Alpine Fault, New Zealand. Geoscience Society of New Zealand 2012 Annual Conference. Hamilton, NZ, 11/25/2012. Talk
10. Boulton, C., Toy, V.G., **Barth, N.C.**, Carpenter, B.M (2012) Along strike applicability of results from the Deep Fault Drilling Program, Alpine Fault, New Zealand. 2012 AGU Fall Meeting. 12/04/2012. Talk
9. Langridge, R.M., **Barth, N.C.**, De Pascale, G.P., Toy, V.G. (2011) Geomorphic structure and paleoseismicity of the central Alpine Fault revealed through LiDAR imagery. Geoscience Society of New Zealand 2011 Annual Conference. Nelson, NZ. 11/28/2011. Talk
8. **Barth, N.C.**, Toy, V.G., Langridge, R.M., Norris, R.J. (2011) Shallow transpressional segmentation and partitioning revealed by LiDAR data: central Alpine Fault, New Zealand. Cooper & Norris Retirement Symposium: The Alpine Fault, Earthquakes and Mountain Building. University of Otago, NZ. 11/23/2011. Talk
7. Boulton, C., Carpenter, B.M., **Barth, N.C.**, Toy, V.G., Marone, C. (2011) Frictional and hydrological properties of Alpine Fault cataclastic fault rocks. Cooper & Norris Retirement Symposium: The Alpine Fault, Earthquakes and Mountain Building. University of Otago, Dunedin, NZ. Talk
6. Boulton, C., **Barth, N.C.**, Carpenter, B.M., Toy, V.G. (2011) Significant along-strike variations in fault gouge thickness, friction coefficient and mineralogy. 2011 AGU Fall Meeting. 12/05/2011. Talk
5. **Barth, N.C.**, Toy, V.G., Langridge, R.M., Norris, R.J. (2011) Shallow transpressional segmentation & partitioning revealed by LiDAR data, central Alpine Fault, New Zealand. 2011 AGU Fall Meeting. Poster
4. Langridge, R.M., Toy, V.G., **Barth, N.C.**, De Pascale, G.P., Sutherland, R., Farrier, T. (2010) First LiDAR images of the Alpine Fault, central South Island, New Zealand. 2010 AGU Fall Meeting. 12/13/2010. Talk

3. **Barth, N.C.**, Toy, V.G., Boulton, C., Carpenter, B.M. (2010) Anatomy of a plate boundary at shallow crustal levels: A composite section from the Alpine Fault, New Zealand. Geological Society of New Zealand 2010 Conference. Auckland, New Zealand. 12/21/2010. Poster
2. **Barth, N.C.**, Toy, V.G., Boulton, C., Carpenter, B.M. (2010) Anatomy of a plate boundary at shallow crustal levels: A composite section from the Alpine Fault, New Zealand. 2010 AGU Fall Meeting. 12/12/2010. Poster
1. **Barth, N.C.**, Hacker, B.R., Seward, G.G., Johnston, S., Young, D., Walsh, E.O., Root, D. (2007) Strain within the ultrahigh-pressure Western Gneiss Region of Norway recorded by quartz LPOs. Geological Society of America 2007 Annual Meeting. Denver, CO. 10/29/2007. Talk

STUDENT SUPERVISION

Andre Mere (PhD candidate). Alpine Fault thermochronology/structure and San Gabriel Mountains landslide geochronology, CA. 2019-present.

Terry Li (MSc candidate). San Gabriel Mountains landslide inventory and spatial analysis. 2023-present.

James Guilinger (PhD). Co-advised with Andrew Gray. “A multi-scale analysis of post-wildfire sediment cascades in mountainous southern California, USA”. 2017-2021. Now Assistant Professor at California State University Monterey Bay.

Chris Gentile (MSc). “A study of rock avalanche deposits in San Antonio Canyon, San Gabriel Mountains, California”. 2016-2018. Now a high school science teacher in Beaumont.

Jozi Pearson (PhD candidate). Alpine Fault lidar geomorphology and thermochronology, NZ. 2015-2018. Withdrew for personal reasons. Now a high school teacher in Los Angeles.

Robert Leeper III (PhD candidate). Post-wildfire landscape response of the 2016 Fish Fire in the San Gabriel Mountains, CA. 2015-2018. Withdrew for personal reasons. Now a geology instructor at Cerritos College and consulting geologist.

Jerlyn Swiatlowski (PhD). Supervised on Hayward Fault displaced curbs study. “Understanding fault creep from the macroscopic to the microscopic”. 2015-2019. Now works at a non-profit.

Seven undergraduate senior thesis projects supervised on local Box Springs Mountains and San Gabriel Mountains geology. Two undergraduate senior theses co-advised on geophysics projects. Seven independent projects supervised on field geology topics. Several undergraduates mentored on professional geologist licensure and UC education abroad opportunities.

TEACHING

| | | |
|-------------------------|--|---------------------|
| Instructor (UCR) | Summer Field Geology – GEO 102A & B | 2016/2017/2018/2019 |
| | Modern Field & Visualization Methods – GEO 248/290 | 2016/2018/2022 |
| | Geomorphology – GEO 162 | 2016/2018/2021 |
| | Introductory Mineralogy – GEO 122 | 2015/2016 |
| | The Earth’s Crust & Interior – GEO 001 | 2022/2023 |
| | Proposal Writing & Review – GEO 201B | 2023 |
| | Geology of California – GEO 259 | 2022 |
| | Natural Hazards & Disasters – GEO 004 | 2021 |
| | Tectonic Geomorphology & Quat. Field Tech. – GEO 249 | 2015 |

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|--------------------------|--|--|
| | Capstone Geology – GEO 190 | 2020/2021 |
| | Special Studies – GEO 190 | 9 undergraduate projects supervised 2015–2023 |
| | Senior Thesis – GEO 195A & B | 5 undergraduate projects supervised 2017–2023 |
| Instructor (NMT) | Geology, Upward Bound program, New Mexico Tech | 2013 |
| Teach Fellow (OU) | Structural Analysis of Deformed Rocks – GEOL 351 – Toy | 2010/2011 |
| | Advanced Field Studies – GEOL 302 – White | 2010/2011 |
| Teach Asst (OU) | Sedimentary Processes and Materials – GEOL 273/373 – Wilson | 2009 |
| | Structural Analysis of Deformed Rocks – GEOL 351 – Toy | 2009 |
| | Field Studies and New Zealand Geology – GEOL 252 – Palin | 2009 |
| Teach Asst (UCSB) | Field Methods – EARTH 104B – Hacker | 2008 |
| | Igneous Petrology – EARTH 102B – Spera | 2008 |
| | Earth Materials – EARTH 114A – Hacker | 2007 |
| | Geology of Death Valley – EARTH 18 – Atwater | 2007 |
| | Geology of Yosemite – EARTH 19 – Keller | 2007 |
| Course Designer | Earth Materials – EARTH 114A & B (UCSB) – Hacker | 2007 |
| | <i>Created course materials, labs, lectures, websites; chose textbooks</i> | |

AWARDS

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| GSA Field Camp Excellence Award | One award annually by GSA & ExxonMobil , recognizes academic excellence, safety awareness, and diversity of participants | 2019 |
| UCR Junior Excellence in Teaching | UCR Academy of Distinguished Teachers presented to 2 pre-tenure faculty, bestows honorary title of “UCR Junior Faculty Distinguished Teaching Professor” | 2016–2017 |
| OU Science Outreach Certificate | University of Otago Division of Sciences in recognition of >60 hours of geology- related public outreach | 2012 |
| Otago Postgraduate Scholarship | University of Otago – New Zealand | 2009–2012 |

GRANTS

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|---|--|--------------|
| RSNZ Marsden Fund | PI Russ Van Dissen. Barth is Co-PI. Geological fingerprinting of earthquake rupture directions: Can it be done? \$649k | 2020–present |
| GeoAllies Program | NSF funded program to improve diversity and inclusion in geosciences. \$2k sub-award. | 2021–present |
| SCEC Grant | Southern California Earthquake Center \$29k for San Andreas Fault research | 2018–present |
| SCEC Grant | Southern California Earthquake Center \$15k for Cucamonga Fault research | 2017–present |
| PRIME Lab Seed Grant | Purdue Rare Isotope Measurement Lab \$10k in cosmogenic radionuclide analyses | 2018 |
| UCEAP Academic Integration Grant | UC Education Abroad Program. \$5k to develop course list & website to encourage Earth Science participation in UCEAP | 2017–2018 |
| Innovative Use of Tech in Teaching | UCR Academic Senate \$40k for tablet & drone digital field mapping incorporation into Earth Sciences courses | 2015–2016 |

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| Capstone Development Grant | UCR Office of Undergraduate Education \$5k to develop Summer Field Geology course | 2015–2016 |
| NGS & Waitt Institute Grant | National Geographic Society \$11k for NZ Sea Cave Project | 2014–2015 |
| NGS Young Explorer Grant | National Geographic Society \$5k for Ph.D. fieldwork | 2010 |

PROFESSIONAL SERVICE

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|-----------------------------------|---|--|
| UNAVCO ECE AC | Chair of UNAVCO Education and Community Engagement Advisory Committee since 2022; member since 2020 | 2020–2023 |
| VFT Working Group Leader | Co-led the “Virtual Class-Related Field Trips” working group (30 participants) as part of a NAGT & IAGD led “Designing Remote Field Experiences” (250 participants) initiative driven by COVID-19 field skill challenges | 2020 |
| SERC Teaching Module | Developed the Geology of Yosemite Valley teaching module, used by at least 20 universities, awarded “exemplary” status, mentioned in <i>Science</i> | 2020 |
| NSF & NASA Panels | Panel review member for NSF (1) and NASA (2); reviewed 45 proposals (15 as primary) and participated in discussions for a total of 170 | 2016–2021 |
| Peer Reviews | Reviewer for 28 journal submissions (16 journals), 3 ad hoc grant proposals, 1 promotion file | 2013–present |
| Special Issue Guest Editor | Editor for 8 submissions to Journal of Structural Geology “Virtual and Digital Structural Geology” and Frontiers in Earth Science “3D Printing in Geology & Geophysics: A New World of Opportunities in Research, Outreach, and Education” | 2019–2023 |
| Invited Lectures | Presented talks at universities (13), institutions (6), UCR (4), and community groups (4) | 2019–present |
| Conference Organizing | Co-organizer for GSA Montreal sessions (2) Co-led GSA Flagstaff “Applications of Unmanned Aerial Vehicles” workshop and session | 2020 2018 |
| Field Trip Organizing | Co-organized GSA Pasadena San Gabriel Mtns field trip (cancelled last minute due to COVID-19) Led 14 CGS mappers on a San Antonio Cyn field trip | 2020 2019 |
| Workshop Participant | EarthScope Governance Workshop, CO UC Field Safety Leadership Workshop, CA GSA Field Safety Leadership Short Course, AZ SCEC Mentor Training Workshop, CA GSA Mega-Scale Landslides Field Forum, UT UNAVCO TLS & SfM in Undergrad Field Education, MT SCEC Analyzing Faults with High Resolution Topography NAGT Early Career Geoscience Faculty Workshop, VA ICDP Drilling in Active Fault Zones, NZ | 2022 2022 2019 2019 2017 2016 2016 2015 2014 |
| Website Development | Created geopad.ucr.edu website to promote digital field mapping techniques in education and research | 2016–present |
| Student Letters | Wrote 97 student letters of recommendation for MSc/PhD, jobs, internships, PG licensure, grants | 2016–present |

UNIVERSITY SERVICE

Systemwide

UCIE UCEAP 10-Yr Review Chair of committee for 10-year review of the UC Education Abroad Program's NZ offerings 2020–2021

UCEAP Australia/NZ FAC Member of faculty advisory committee 2014–present

Campus

Search Committee Member Member of 10 UCR search committees for director (1), faculty (7), and instructor (2) 2014–2023

Judge Judge of student presentations at UCR Undergraduate Research Symposium and UCR GIS Day (annually) 2016–present

Diversity Advocate Participant in NSF-funded [GeoAllies](#) Field Program 2022

Participant in #FirstGenUCR Project promoting the role of first-generation faculty and staff at UCR 2017–2019

Trained ally in UCR Safe Zone Ally Program to support LGBTQ students 2016–present

Department

Faculty Advisor Advisor to UCR's Geology Student Organization (GSO) to provide guidance and help plan events 2018–present

Education Abroad Liaison Promote UCEAP opportunities, mentor interested students, help plan curriculum, identify scholarships 2018–present

Undergraduate Advising Comm. Member of committee examining curriculum pathways, mentoring students, participating in events 2019–present

Collections Acquisition Assisted the department's museum in mineral donations 2016

COMMUNITY SERVICE & OUTREACH

Director On board of the [Riverside County Parks Foundation](#), supporting scenic, recreational, and historic interests 2018–present

Scientific Media Many news articles highlighting Howarth et al. (2021) Alpine Fault research, e.g. [1](#), [2](#), [3](#), [4](#), [5](#), [6](#) 2021

Several UCR articles highlighting research, e.g. [1](#), [2](#), [3](#) 2020–2021

National Geographic [explorer profile](#) and [video](#) 2016–2018

Geological Reviewer Contributed geologic content to “Mountains, Volcanoes, Coasts and Caves: Origins of Aotearoa New Zealand's Natural Wonders” [book](#) ISBN 9781869409678 2022

Served on technical advisory committee for Gage Canal Trail near UCR, created [geology interpretative sign](#) 2021–2022

Reviewed the “[Box Springs Trails Master Plan](#)” 2015–2020

Edited geology sections of “Caves: Exploring New Zealand's Subterranean Wilderness” coffee table [book](#) ISBN 97804733827997 2016

Provided geology introduction to “Canioning in New Zealand” recreational [guidebook](#) ISBN 9780473330965 2015

Conservation & Research Officer for the New Zealand Speleological Society, >100 hours on geology at various community/non-profit clubs and events, >30 hours 2010–2012

Public Speaker 2010–present

Hands-on Teacher/Guide for 1st-8th grade students about geology at UCR and UCSB affiliated events and career fairs, >100 hours 2004–present