Adam C. Maloof

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Education

1998-2004	Harvard University (Cambridge, MA) Ph.D., Earth and Planetary Sciences, Advisor: Paul F. Hoffman Thesis: Three non-uniformitarian changes that shaped the Neoproterozoic Earth
1994-1998	Carleton College (Northfield, MN) B.A., Geology; Junior year, University Courses on Svalbard (Spitsbergen, Norway)

Professional Experience

2018→	Professor of Geosciences, Princeton University
2012-2018	Associate Professor of Geosciences, Princeton University
2006-2012	Assistant Professor of Geosciences, Princeton University James B. Macelwane medalist, Alfred P. Sloan Fellow
2004-2006	Agouron Postdoctoral Fellow, Massachusetts Institute of Technology
1999 & 2002	Teaching Fellow, Harvard University, two *Distinction in Teaching* awards

Research Interests

My research focusses on decoding records of Earth history that shed light on the origin of animals, the evolution of Earth's climate and geography, and the sensitivity of the Earth-system to physical, chemical, and biological perturbations. I concentrate my efforts on precipitated sedimentary rocks such as carbonate, because a single outcrop may contain physical evidence for the energetics of winds, waves, and currents, biological records of ecology and evolution; chemical archives of the climate system; and magnetic evidence of latitude and geography. My most unique contributions of new data are the measurements I make during extended field campaigns, complemented by a combination of geochemical and geophysical field and laboratory measurements, and simple numerical models. Innovative to this pursuit is my application of the process-oriented study of modern systems that provide quantitative uncertainties to interpretations of ancient rock.

Memberships

Geological Society of America (GSA)
American Geophysical Union (AGU)
American Association of Petroleum Geologists (AAPG)
Society for Sedimentary Geology (SEPM)
European Geophysical Union (EGU)
Sigma Xi

Journal Articles ($^{\otimes}$undergraduate or *Ph.D. student, or †postdoc that I advised or co-advised)

76. Ahm, A.-S.C., Bjerrum, C.J., Hoffman, P.F., Macdonald, F.A., **Maloof, A.C.**, *Rose, C.V., Strauss, J.V., and Higgins, J.A., The Ca and Mg isotope record of the Cryogenian Trezona carbon isotope

excursion. doi:568:117002.

75. ⊗Geyman, E.C. and **Maloof, A.C.**, Facies control on carbonate δ^{13}C on the Great Bahama Bank, *Geology*, doi:560:116790.

74. *Howes, B., *Mehra, A.K., and **Maloof, A.C.**, Three-dimensional morphometry of ooids in oolites: a new tool for more accurate and precise paleoenvironmental interpretation, *JGR Earth Surface*, doi:10.1029/2020JF005601.

73. ⊗Geyman, E.C., **Maloof, A.C.**, and *Dyer, B., How is sea level change encoded in carbonate stratigraphy?, *Earth and Planetary Science Letters*, 560:116790.

72. ⊗Getraer, A. and **Maloof, A.C.**, Climate-driven variability in runoff erosion encoded in stream network geometry, *Geophysical Research Letters*, doi:10.1029/2020GL091777.

71. ⊗Tasistro-Hart, A.R., **Maloof, A.C.**, Schoene, B., ⊗Eddy, M. 2020, Astronomically forced hydrology of the Late Cretaceous subtropical Potosí Basin, Bolivia, *Geological Society of America Bulletin*, 132, doi:10.1130/B35189.1.

70. Austermann, J., ⊗Chen, C.Y., Lau, H.C.P, **Maloof, A.C.**, Latychev, K. 2020, Constraints on mantle viscosity and Laurentide ice sheet evolution from pluvial paleolake shorelines in the western United States, *Earth & Planetary Science Letters*, 532:116006, doi:10.1016/j.epsl.2019.116006.

69. ⊗Geyman, E.C. 2020, **Maloof, A.C.**, Deriving tidal structure from satellite image time series, *Earth and Space Science*, doi.org/10.1029/2019EA000958.

68. *MacLennan, S.A., Eddy, M.P., Merschat, A.J., *Mehra, A.K., Crockford, P.W., **Maloof A.C.**, Southworth, S., Schoene, B. 2020. Geologic evidence for an icehouse Earth before the Sturtian global glaciation. *Science Advances* 6(24), doi.org/10.1126/sciadv.aay6647.

67. Borlina, C.S., Weiss, B.P., Lima, E.A., Tang, F., Taylor, R.J.M., Einsle, J.F., Harrison, R.J., Fu, R.R., Bell, E.A., Alexander, E.W., Kirkpatrick, H.M., Wielicki, M.M., Harrison, T.M., Ramezani, J., **Maloof, A.C.**, Re-evaluating the Evidence for a Hadean-Eoarchean Dynamo, *Science Advances*, 6(15):1-9, doi.org/10.1126/sciadv.aav9634.

66. *Husson, J.M., Linzmeier, B.J., Śliwiński, M.G., Kitajima, K., Ishida, A., **Maloof, A.C.**, Schoene, B., Peters, S.E., Valley, J.W., Large isotopic variability at the micron-scale in 'Shuram' excursion carbonates from South Australia, *Earth & Planetary Science Letters* 538, doi.org/10.1016/j.epsl.2020.116211.

65. *Mehra, A.K, Watters, W.F., Grotzinger, J.P., **Maloof**, A.C. 2020, Three-dimensional reconstructions of the putative metazoan Namapoikia show that it was a microbial construction, *Proceedings of the National Academy of Sciences*, dx.doi.org/10.1073/pnas.2009129117.

64. Moore, J.L., Porter, S.M., Webster, M., **Maloof, A.C.**, Chancelloriid sclerites from the Dyeran-Delamaran ('Lower'-'Middle' Cambrian Boundary interval of the Pioche-Caliente region, Nevada, USA, *Papers in Paleontology*.

63. ⊗Geyman, E.C., **Maloof, A.C.** 2019, A diurnal carbon cycle engine explains ^{13}C-enriched carbonates without increasing the global production of oxygen, *Proceedings of the National Academy of Sciences*, doi:10.1073/pnas.1908783116.

62. Dahl, T.W., Connelly, J.N., Li, D., Kouchinsky, A., Gill, B.C., Porter, S.A., **Maloof, A.C.**, Bizzarro, M. 2019, Atmosphere-ocean oxygen and productivity dynamics during early animal radiations, *Proceedings of the National Academy of Sciences*, doi:10.1073/pnas.1901178116.

61. ⊗Park, Y., *Swanson-Hysell, N.L., *Maclennan, S.A., **Maloof, A.C.**, *Gebreslassie, M., Tremblay, M.M., Schoene, B., Alene, M., Antillia, E.S.C., *Tesema, T., Haileab, B. 2019, The lead-up to the Sturtian Snowball Earth: Neoproterozoic chemostratigraphy time-calibrated by the Tambien Group of Ethiopia, *Geological Society of America Bulletin*, doi:10.1130/B35178.1.

60. Hay, C.C., Creveling, J.R., Hagen, C.J., **Maloof, A.C.**, Huybers, P. 2019, A Library of Early Cambrian Chemostratigraphic Correlations from a Reproducible Algorithm, *Geology*, doi:10.1130/G46019.1.

59. ⊗Geyman, E.C. and **Maloof, A.C.**, A simple method for extracting water depth from multispectral satellite imagery in regions of variable bottom type, *Earth and Space Science*, doi.org/10.1029/2018EA000539.

58. Ahm, A-S. C., **Maloof, A.C.**, Macdonald, F.A., Hoffman, P.F., Bjerrum, C.J., Bold, U., *Rose, C.V., Strauss, J.V., Higgins, J.A. 2019, An early diagenetic deglacial origin for basal Ediacaran "cap dolostones", *Earth & Planetary Science Letters*, doi.org/10.1016/j.epsl.2018.10.046.

57. ⊗Campion, A.M., **Maloof, A.C.**, Schoene, B., Oleynik, S., Sanz-López, J., Blanco-Ferrera, S., Merino-Tomé, O., Bahamode, and J.R., Fernández, L.P. 2018, Constraining the timing and amplitude of late Visean glacioeustasy with a continuous carbonate record in Northern Spain, *Geochemistry, Geophysics, Geosystems*, doi: 10.1029/2017GC007369 .

56. *Dyer, B., **Maloof, A.C.**, Purkis, S.J., and Harris, P.M. 2018, Quantifying the relationship between water depth and carbonate facies, *Sedimentary Geology*, doi: 10.1016/j.sedgeo.2018.05.011.

55. *Maclennan, S.A, ⊗Park, Y., *Swanson-Hysell, N.L., **Maloof, A.C.**, Schoene, B., *Gebreslassie, M., Antilla, E., *Tesema, T., Alene, M., and Haileab, B. 2018, The arc of the snowball: U-Pb dates constrain the Islay anomaly and the initiation of the Sturtian Glaciation, *Geology*, doi: 10.1130/G40171.1.

54. *Mehra, A.K. and **Maloof, A.C.** 2018, A multiscale approach reveals that Cloudina aggregates are detritus and not in situ reef constructions, *Proceedings of the National Academy of Sciences*, doi: 10.1073/pnas.1719911115.

53. Halverson, G.P., Kunzmann, M., Strauss, J.V., and **Maloof, A.C.** 2018, The Tonian–Cryogenian transition in Northeastern Svalbard, *Precambrian Research*, 319, pp 79-95, doi:10.1016/j.precamres.2017.12.010.

52. Hoffman, P.F., Abbot, D.S., Ashkenazy, Y., Benn, D.I., Brocks, J.J., Cohen, P. A., Cox, G.M., Creveling, J.R., Donnadieu, Y., Erwin, D.H., Fairchild, I.J., Ferreira, D., Goodman, J.C., Halverson, G.P., Jansen, M.F., Le Hir, G., Love, G.D., Macdonald, F.A., **Maloof, A.C.**, Partin, C.A., Ramstein, G., Rose, B.E.J., *Rose, C.V., Sadler, P.M., Tziperman, E., Voigt, A., and Warren, S.G. 2017, Snowball Earth climate dynamics and Cryogenian geology-geobiology, *Science Advances*, doi:10.1126/sciadv.1600983.

51. ⊗Chen, C.Y. and **Maloof, A.C.** 2017, Revisiting the deformed high shoreline of Lake Bonneville, *Quaternary Science Reviews*, doi:10.1016/j.quascirev.2016.12.019.

50. *Dyer, B., Higgins, J.A., and **Maloof, A.C.** 2016, A probabilistic analysis of meteorically altered $\delta^{13}C$ chemostratigraphy from late Paleozoic ice age carbonate platforms, *Geology*, doi:10.1130/G38513.1.

49. Hayes, C.T., McGee, D., Mukhopadhyay, S., Boyle, E.A., and **Maloof, A.C.** 2017, Helium and thorium isotope constraints on African dust transport to the Bahamas over recent millennia, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2016.10.031

48. Samuels, B.M., Kellerson, K.W., Girit, B., Kukyanov, A., **Maloof, A.C.**, and Rozen, W. 2016, Apparatuses and methods for serial sectioning and imaging, US Patent 9,233,453.

47. *Husson, J.M., Schoene, B., ⊗Bluher, S., and **Maloof, A.C.** 2015, Chemostratigraphic and U-Pb geochronologic constraints on carbon cycling across the Silurian-Devonian boundary, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2015.11.044.

46. *Dyer, B., **Maloof, A.C.**, and Higgins, J.A. 2015, Glacioeustasy, Meteoric Diagenesis, and the Carbon Cycle During the Mid-Carboniferous, *Geochemistry, Geophysics, Geosystems*, doi:10.1002/2015GC006002.

45. Weiss, B.P., **Maloof, A.C.**, Tailby, N., Ramezani, J., Fu, R.R., Hanus, V., Trail, D., Watson, E.B., Harrison, T.M., Bowring, S.A. Kirschvink, J.L., Swanson-Hysell, N.L., and Coe, R.S., 2015, Pervasive remagnetization of detrital zircon host rocks in the Jack Hills, Western Australia and implications for records of the early geodynamo, *Earth and Planetary Science Letters*, 430, pp 115-128.

44. *Husson, J.M., Higgins, J.A., **Maloof, A.C.**, and Schoene, B. 2015, Ca and Mg isotope constraints on the origin of Earth's deepest δ^{13}C excursion, *Geochimica et Cosmochimica Acta*, 160, pp. 243-266.

43. *Dyer, B. and **Maloof, A.C.** 2015, Physical and chemical stratigraphy suggest small or absent glacioeustatic variation during formation of the Paradox Basin cyclothems, *Earth and Planetary Science Letters*, 419, pp. 63-70.

42. *Swanson-Hysell, N.L., **Maloof, A.C.**, Condon, D.J., Jenkin, G.R.T., Alene, M., Tremblay, M.M., *Tesema, T., Rooney A.D. and Haileab, B. 2015, Stratigraphy and geochronology of the Tambien Group, Ethiopia: Evidence for globally synchronous carbon isotope change in the Neoproterozoic, *Geology*, doi:10.1130/G36347.1.

41. *Husson, J.M., **Maloof, A.C.**, Schoene, B., ⊗Chen, C.Y., and Higgins, J.A. 2015, Stratigraphic expression of Earth's deepest δ^{13}C excursion in the Wonoka formation of South Australia, American Journal of Science, 315, pp. 1-45.

40. †Ewing, R.C., Eisenman, I., Lamb, M.P., Poppick, L., **Maloof, A.C.**, and Fischer, W.W. 2014, New constraints on equatorial temperatures during a Late Neoproterozoic snowball Earth glaciation, *Earth & Planetary Science Letters* 406, pp. 110-122.

39 *Swanson-Hysell, N. L., Burgess, S.D., **Maloof, A.C.** and Bowring, S.A. 2014, Magmatic activity and plate motion during the latent stage of Midcontinent Rift development, *Geology*, doi:10.1130/G35271.1

38. *Rose, C.V., **Maloof, A.C.**, Schoene, B., †Ewing, R.C., Linnemann, U., Hofmann, M., Cottle, J.M., *Budnick, A. 2013, The end-Cryogenian glaciation of South Australia, *Geoscience Canada–Hoffman Series*, 40, pp. 256-293.

37. †Kopp, R.E., Simons, F.J., Mitrovica, J.X., **Maloof, A.C.**, Oppenheimer, M. 2013, A probabilistic assessment of sea level variations within the last interglacial stage, *Geophysical Journal International*, 192(3), pp. 1-6

36. *Swanson-Hysell, N.L, **Maloof, A.C.**, Evans, D.A.D., Kirschvink, J.L., Halverson, G.P. and Hurtgen, M.T. 2012, Constraints on Neoproterozoic paleogeography and Paleozoic orogenesis from paleomagnetic records of the Bitter Springs Formation, Amadeus Basin, central Australia, *American Journal of Science*, 312 pp. 817-884.

35. *Husson, J.L., **Maloof, A.C.** and Schoene, B. 2012, A syn-depositional age for the Shuram δ^{13}C anomaly required by isotope conglomerate tests, *Terra Nova*, 24, pp. 318-325.

34. Hoffman, P.F., Halverson, G.P., Domack, E.W., **Maloof, A.C.**, *Swanson-Hysell, N.L. and Cox, G.M. 2012, Cryogenian glaciations on the southern tropical paleomargin of Laurentia (NE Svalbard and East Greenland), and a primary origin for the upper Russøya (Islay) carbon isotope excursion, *Precambrian Research*, 206-207, pp. 137-158.

33. ⊗Proistosescu, C., Huybers, P. and **Maloof, A.C.** 2012, To tune or not to tune? - Detecting orbital variability in pre-Pleistocene climate records, *Earth and Planetary Science Letters*, 325-326 pp. 100-107.

32. **Maloof, A.C.** and Grotzinger, J.P. 2012, The Holocene shallowing-upward parasequence of Northwest Andros Island, The Bahamas, *Sedimentology*, 59, pp. 1375-1407.

31. *Rose, C.V., *Husson, J.L., *Swanson-Hysell, N.L., Poppick, L.N., Cottle, J.M., Schoene, B. and **Maloof, A.C.** 2012, Constraints on the origin and relative timing of the Trezona δ^{13}C anomaly below the end-Cryogenian glaciation, *Earth and Planetary Science Letters*, 319-320 pp. 241-250.

30. Mitchell, R.N., Kilian, T.M., Raub, T.D., Evans, D.A.D., Bleeker, W. and **Maloof, A.C.** 2011, Sutton hotspot: Resolving Ediacaran-Cambrian tectonics and true polar wander for Laurentia, *American Journal of Science*,311 pp. 651-663.

29. *Swanson-Hysell, N.L, Feinberg, J.M., Berquó and **Maloof, A.C.** 2011, Self-reversed magnetization held by martite in basalt flows from the 1.1-billion-year-old Keweenawan rift, Canada, *Earth and Planetary Science Letters*, 305 pp. 171-184.

28. †Lewis, K.W., ⊗Keeler, T.L., **Maloof, A.C.** 2011, MatStrat: New software for plotting and analyzing stratigraphic data, *EOS Transactions of the American Geophysical Union*, 92, pp. 37-38.

27. **Maloof, A.C.**, Porter, S.M., Moore, J.L., Dudás, F.Ö., Bowring, S.A., Higgins, J.A., Fike, D.A. and ⊗Eddy, M. 2010, The earliest Cambrian record of animals and ocean geochemical change, *Geological Society of America Bulletin*, 122 pp. 1731-1774.

26. Weiss, B.P., Pedersen, S., Garrick-Bethell, I., Stewart, S.T., Louzada, K.L., **Maloof**, A.C. and *Swanson-Hysell, N.L. 2010, Paleomagnetism of impact spherules from Lonar Crater, India and a test for impact-generated fields, *Earth and Planetary Science Letters*, 298 pp. 66-76.

25. Dang, H.B., **Maloof, A.C.** and Romalis, M.V. 2010, Ultrahigh sensitivity magnetic field and magnetization measurements with an atomic magnetometer, *Applied Physics Letters*, 97, 151110.

24. **Maloof, A.C.**, *Rose, C.V., Beach, R., Samuels, B.M., Calmet, C.C., Erwin, D.H., Poirier, G.R., Yao, N. and Simons, F.J., Possible animal-body fossils in pre-Marinoan limestones from South Australia, *Nature Geoscience*, 3 pp. 653-659.

23. *Rose, C.V. and **Maloof, A.C.** 2010, Testing models for post-glacial 'cap dolostone' deposition: Nuccaleena Formation, South Australia, *Earth and Planetary Science Letters*, 296 pp. 165-180.

22. **Maloof, A.C.**, Ramezani, J., Bowring, S.A., Fike, D.A., Porter, S.M., *Mazouad, M. 2010, Constraints on early Cambrian carbon cycling from the duration of the Nemakit-Daldynian–Tommotian boundary δ^{13}C shift, Morocco, *Geology*, 38 pp. 623-626.

21. *Swanson-Hysell, N.L., *Rose, C.V., †Calmet, C.C., Halverson, G.P., Hurtgen, M.T., **Maloof, A.C.** 2010, Cryogenian glaciation and the onset of carbon-isotope decoupling, *Science*, 328 pp. 608-611.

20. Jones, D.S., **Maloof, A.C.**, Hurtgen, M.T., Rainbird, R.H. and Schrag, D.P. 2010, Regional and global chemostratigraphic correlation of the early Neoproterozoic Shaler Supergroup, Victoria Island, Northwestern Canada, *Precambrian Research*, 181 pp. 43-63.

19. Macdonald, F.A., Schmitz, M.D., Crowley, J.L., Roots, C.F., Jones, D.S., **Maloof, A.C.**, Strauss, J.V., Cohen, P.A., Johnston, D.T. and Schrag, D.P. 2010, Calibrating the Cryogenian, *Science*, 327, pp. 1241-1243.

18. **Maloof, A.C.**, Stewart, S.T., Weiss, B.P., Soule, S.A., *Swanson-Hysell, N.L., Garrick-Bethell, I., Louzada, K.L. and Poussart, P.M. 2010, The geology of Lonar Crater, *Geological Society of America Bulletin*, 122(1), pp. 109-126.

17. †Kopp, R.E., Simons, F.J., Mitrovica, J.X., **Maloof, A.C.** and Oppenheimer, M. 2009, Probabilistic assessment of sea level during the last interglacial stage, *Nature*, 462 pp. 863-868.

16. †Kopp, R. E., Schumann, D., Raub, T.D., Powars, D.S., Godfrey, L.V., *Swanson-Hysell, N.L., **Maloof, A.C.** and Vali, H. 2009, An Appalachian Amazon? Magnetofossil evidence for the development of a tropical river-like system in the mid-Atlantic United States during the Paleocene-Eocene thermal maximum, *Paleoceanography*, 24, PA4211.

15. *Swanson-Hysell, N.L, **Maloof, A.C.**, Weiss, B.P. and Evans, D.A.D. 2009, No asymmetric geomagnetic reversals recorded by 1.1-billion-year-old Keweenawan basalts, *Nature Geoscience*, 2 pp. 713-717.

14. Louzada, K.L., Weiss, B.P., **Maloof, A.C.**, *Swanson-Hysell, N.L. and Soule, S.A. 2008, Paleomagnetism of Lonar Impact Crater, India, *Earth and Planetary Science Letters*, 275 pp. 308-319.

13. Halverson, G.P., Dudas, F.O., **Maloof, A.C.** and Bowring, S.A. 2007, Evolution of the $^{87}Sr/^{86}Sr$ composition of Neoproterozoic seawater, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 256 (3-4) pp. 103-129.

12. **Maloof, A.C.**, †Kopp, R.E., Grotzinger, J.P., Fike, D., Bosak, T., Vali, H., Weiss, B.P. and Kirschvink, J.L. 2007, Sedimentary iron cycling and the origin and preservation of magnetization in platform carbonate muds, Andros Island, Bahamas, *Earth and Planetary Science Letters*, 259 pp. 581-598.

11. Halverson, G.P., **Maloof, A.C.**, Schrag, D.P., Dudas, F.Ö. and Hurtgen, M.T. 2007, Stratigraphy and geochemistry of a ca 800 Ma negative carbon isotope interval in northeastern Svalbard, *Chemical Geology*, 237 pp. 5-27.

10. †Kopp, R.E., Weiss, B.P., **Maloof, A.C.**, Vali, H., Nash, C.Z., and Kirschvink, J.L. 2006, Chains, clumps, and strings: Magnetofossil taphonomy with ferromagnetic resonance spectroscopy, *Earth and Planetary Science Letters*, 247 pp. 10-25.

9. **Maloof, A.C.**, Halverson, G.P., Kirschvink, J.L., Schrag, D.P., Weiss, B.P., and Hoffman, P.F. 2006, Combined paleomagnetic, isotopic, and stratigraphic evidence for true polar wander from the Neoproterozoic Akademikerbreen Group, Svalbard; Geological Society of America Bulletin, 118 pp. 1099-1124.

8. Halverson, G.P., Hoffman, P.F., Schrag, D.P., **Maloof, A.C.**, and Rice, A.H.N. 2005, Toward a Neoproterozoic composite carbon-isotope record; Geological Society of America Bulletin, 117 pp. 1181-1207.

7. **Maloof, A.C.**, Schrag, D.P., Crowley, J.L., and Bowring, S.A. 2005, An expanded record of Early Cambrian carbon cycling from the Anti-Atlas Margin, Morocco; Canadian Journal of Earth Sciences, 42 pp. 2195-2216.

6. Halverson, G.P., **Maloof, A.C.**, Hoffman, P.F. 2004, The Marinoan glaciation (Neoproterozoic) in northeast Svalbard, Basin Research 16 pp. 297-324.

5. Hoffman, P.F. and **Maloof, A.C.** 2003, Comment on: A complex microbiota from snowball Earth times: Microfossils from the Neoproterozoic Kingston Peak Formation, Death Valley, USA, by Corsetti, F.A., Awramik, S.M., and Pierce, D., Proceedings of the National Academy of Sciences 100 pp. 4399-4404.

4. **Maloof, A.C.**, Kellogg, J.B., and Anders, A.M. 2002, Neoproterozoic sand wedges: crack formation in frozen soils under diurnal forcing during a snowball Earth; Earth and Planetary Science Letters 204 pp. 1-15.

3. Hoffman, P.F. and **Maloof, A.C.** 2001, Tilting at Snowballs, A comment on Proterozoic equatorial glaciation: Has 'snowball Earth' a snowball's chance?, by Williams, G.E. and Schmidt, P.W., The Australian Geologist 117 pp. 21-25, 2000. [pdf]

2. **Maloof, A.C.** 2000, Superposed folding at the junction of the inland and coastal belts, Damaran orogen, NW Namibia; Communications of the Geological Survey of Namibia, Henno Martin Commemorative Volume 12 pp. 89-98. [pdf]

1. Hoffman, P.F. and **Maloof, A.C.** 1999, The Snowball theory still holds water; Nature 397 p. 384.

Journal Articles in review

77. Moore, J.L., Porter, S.M., Webster, M., and **Maloof, A.C.**, First record of cambroclave sclerites from the mid-Cambrian of Laurentia, *Paleontology*, in press.

78. Daher, H., Arbic, B.K., Müller, M., Williams, J.G., Adcroft, A.J., Ansong, J.K., Cornuelle, B.D., Krasny, R., **Maloof, A.C.**, Mitrovica, J.X., Austermann, J., Boggs, D.H., Crawford, E.B., Lau, H.C.P., Tidal energy dissipation over the history of the Earth-Moon system, *Journal of Geophysical Research*, in review.

79. *Mehra, A.K., Samuels, B.M., **Maloof, A.C.**, A novel technique for producing three-dimensional data using serial sectioning and semi-automatic image classification, *Journal of Microscopy*, in review.

80. Hagen, C.J., Creveling, J.R., Moore, J.L., **Maloof, A.C.**, Porter, S.A., and Huybers, P., Questioning the chronology of the Terreneuvian (early Cambrian) radiation of animals, *Geological Society of American Bulletin*, almost submitted.

Original Field Work (133 weeks while at Princeton, not including 19 week-long course research trips)

2019 Yukon Territories [3 weeks] *How old are the oldest animal reefs?*

2018 West Greenland [3 weeks] *The time evolution of Earth's early magnetic field recorded in Earth's oldest rocks.*

2018 Spain and Italy [2 weeks] *The importance of turbidites on astronomical tuning of the Cretaceous-Paleogene Boundary.*

2017 & 2018 Western Australia [4 weeks] *How do modern platform carbonates record sea level and sea water chemistry?*

2017 & 2018 Bahamas [10 weeks] *How do modern platform carbonates record sea level and sea water chemistry?*

2016-2017 & 2018-2019 Antarctica [15 weeks] *Climate and environmental controls/consequences of the fish to amphibian transition in the middle-late Devonian.*

2016 Labrador [2 weeks] *Chemostratigraphic constraints on early Cambrian trilobite evolution and global correlation.*

2015 Canadian Rockies [2 weeks] *A stratigraphic and drone study of the diversity and ecology of Earth's oldest biomineralizing animals, Cloudina and Namacalathus.*

2015, 2016, & 2019 Bolivian and Argentinian Altiplano [10 weeks] *A stratigraphic, geochronological, and drone study of orbital forcing, lacustrine hydrology, and paleontology across the Cretaceous-Paleogene Boundary, Potosí Basin.*

2015 Cantabrian Mountains, Spain [2 weeks] *A rare continuous stratigraphic record across the Visean-Serpukhovian boundary and the expansion of Late Paleozoic ice sheets.*

2010 & 2013 & 2015 & 2017 Ethiopia [13 weeks] *Calibrating pre-Cryogenian Earth history.*

2014, 2015, & 2018 Nevada [7 weeks] *Chemostratigraphic constraints on early Cambrian trilobite evolution and global correlation.*

2014 Ellesmere Island [3 weeks] *A new early Cambrian Lagerstätte and the coevolution of animal life and climate.*

2014 Great Britain [1 week] *The onset of Late Paleozoic Ice Age glaciation constrained by physical and chemo-stratigraphic data from a far-field basin.*

2014 Southern Namibia [3 weeks] *A stratigraphic study of the diversity and ecology of Earth's oldest biomineralizing animals, Cloudina and Namacalathus.*

2013 Western Australia [4 weeks] *Paleomagnetic and geochronological constraints on plate velocities during the Archaean from Earth's oldest flood basalts.*

2012 & 2017 Western Australia [7 weeks] *The time evolution of Earth's early magnetic field recorded in Earth's oldest zircons*

2012 Utah [2 weeks] *A viscoelastic deformation model from paleoshorelines of Lake Bonneville: Implications for late Pleistocene glacial retreat in the Western U.S.*

2011, 2012, 2014, & 2018 New Mexico, Utah, Nevada, Colorado, and Wyoming [13 weeks] *Frequency and magnitude of sea level change during the late Paleozoic ice age*

2008 South China [2 weeks] *U-Pb ash calibrated record of Early Cambrian global change*

2007 - 2010 South Australia [19 weeks] *Marinoan glaciation and the Wonoka Anomaly*

2006 - 2008 Central Australia [18 weeks] *True polar wander hypothesis for global change 800 Ma*

2007 Okanagan Highlands, Canada [2 weeks] *Early Eocene climate sensitivity recorded in varved lacustrine sediments*

2005 & 2006 Lonar, India [6 weeks] *Bolide impact in basalt–analog for surface processes on Mars*

2005 & 2007 Ontario, Canada [4 weeks], *Non-dipole geomagnetic field 1.1 Ga*

2005, 2007, 2010, 2014, & 2016 Andros Island, Bahamas [10 weeks], *The origin of magnetism and parasequence architecture in platformal carbonates*

2004 East Greenland [4 weeks] *Sedimentation under sea ice during Cryogenian glaciation*

2004 Victoria Island, Canada [4 weeks], *True polar wander hypothesis for global change 800 Ma*

2001 & 2003 Mackenzie Mountains, Canada [8 weeks] *Testing the snowball Earth hypothesis in the Windemere Supergroup*

1999-2002 East Svalbard, Norway [13 weeks] *Sequence/chemo/magneto-stratigraphy through 250 myr of the Neoproterozoic era*

2000-2011 & 2014 Anti-Atlas Mountains, Morocco [34 weeks] *The earliest Cambrian record of animals and ocean geochemical change*

2002 W. Newfoundland, Canada [2 weeks] *Early Ordovician oceanic crust and the oxygen-isotopic evolution of seawater*

2001 Southern Namibia [3 weeks] *Neoproterozoic glaciation of a continental slope*

2000 Adrar, Mauritania [2 weeks] *A terrestrial Neoproterozoic glacial deposit and its cap carbonate*

2000 Talkeetna Arc, Alaska with L.M. Mehl [2 weeks] *Structural and compositional mapping of the upper mantle beneath an accreted arc*

1999 Paradox Basin, SE Utah with D.L. Barbeau [2 weeks] *Evolution of a Pennsylvanian-Permian flexural basin beside a basement cored uplift*

1998 E. Newfoundland, Canada [2 weeks] *Sedimentologic and detrital zircon study of the Late Neoproterozoic Gaskiers Fm diamictite*

1998 E. Greenland with A. Andresen and E.H. Hartz [8 weeks] *Structure of the Fjord Region Detachment and deposition of Devonian old red sandstone*

1998 Northern Norway with J. Kohler [2 weeks] *Subglacial hydrology of Svartisen glacier*

1998 Anti-Atlas Mountains, Morocco with J.L. Kirschvink [4 weeks] *Magnetostratigraphy of Early Cambrian carbonates and lava flows*

1997 Northern Namibia [10 weeks] *Subject of undergraduate thesis: Otavi Group stratigraphy and Pan African deformation*

1997 W. Spitsbergen, Norway [3 weeks] *Genesis and time-evolution of an arctic valley pingo field*

Lab Facilities and Data Archives

Grinding and Imaging Reconstruction Instrument (GIRI) in climate-controlled lab. Dedicated server hosting digital archive of 5-30 micron resolution serial image stacks and 3D models.

Geochemistry lab with sercon continuous flow isotope ratio mass spectrometer coupled to gas bench online gas introduction system and autosampler. 42,000 measurements of carbon and oxygen isotopes on carbonates since January 2014.

Curated rock storage and shared sample preparation facilties.

Fleet of fixed wing drones, differential GPS's, and multi-processor workstations for the production of 4 cm/pixel resolution NIR-RGB imagery and digital elevation models. Supporting server hosting digital archive of orthophotomosaics and elevation models.

Funding

NSF PLR 1543367, Polar Programs: Middle-Late Devonian Vertebrates of Antarctica (2016-2018; $367,421)

Princeton University Curriculum Innovation Fund: Earth's Features: observed by Drones, modeled in Code. Proposal to fund the development of online course modules for scientific computing and field trips for data collection, with F.J. Simons (2015, 2017, 2018; $90,000).

Princeton University, Department of Geosciences Bolivia Fund: U-Pb zircon and astronomical time scale for vertebrate extinction/origination across the Cretaceous-Tertiary boundary from lake sediments in Bolivia (2015-2016; $200,000).

NSF EAR 1410317, Integrated Earth Systems: Collaborative Research: Toward a global timeline of biological and ocean geochemical change during the early Cambrian (2014-2018; $1,054,947).

Princeton University Gardner Magic Grant: Measuring Climate Change: Methods in Data Analysis and Scientific Writing. Award to purchase an unmanned aerial vehicle for GEO/WRI 201 Sophomore/Junior course field research trips, with A.E. Irwin Wilkins (2014; $17,500).

Princeton University Curriculum Innovation Fund: Measuring Climate Change: Methods in Data Analysis and Scientific Writing. Award to fund the GEO/WRI 201 Sophomore/Junior course Fall-break field trip for 3 years with A.E. Irwin Wilkins (2014, 2016, 2018; $175,000).

NSF EAR-1323158, Sedimentary Geology and Paleobiology: Collaborative Research: Quantifying Rates of Neoproterozoic Global Change, Ethiopia (2014-2016; $150,000).

NSF EAR-1251991, Sedimentary Geology and Paleobiology: Collaborative Research: Estimating the Tempo of the Cambrian Explosion (2013; $30,000).

NSF EAR-1028768, Instrumentation and Facilities: Development of An Integrated Serial Grinder and Photo-Imager for 3D Fossil Reconstruction (2012-2014; $449,113).

NSF EAR-1121034, Sedimentary Geology and Paleobiology: Testing models for the origin of the deepest carbon-isotope anomaly in Earth history: The Wonoka Formation of South Australia (2011-2012; $224,115).

Princeton University 250th Anniversary Fund: Earth's Environments and Ancient Civilizations. Award to fund the FRS-171(187) Freshman Seminar field trip to Cyprus for 3 years with F.J. Simons (2011-2013; $180,000).

Alfred P. Sloan Foundation Research Fellowship (2010-2012; $50,000).

NSF EAR-0842946, Sedimentary Geology and Paleobiology: Fluctuating tidewater glaciers, chemical weathering and survival of reef-dwelling organisms: the Marinoan snowball, South Australia (2009-2011; $226,176).

NSF EAR-0638660, Sedimentary Geology and Paleobiology: Collaborative Research (w/ S.A. Bowring): Calibrating Rates and Duration for Isotopic Variability During the Early Cambrian Radiation of Animals, Anti-Atlas Mountains, Morocco (2007-2011;$188,507).

Princeton University 250th Anniversary Fund: Earth's Changing Surface & Climate. Award to fund the FRS-145(9) Freshman Seminar field trip to California for 3 years with F.J. Simons (2007-2009; $110,000).

NSF EAR-0514657, Sedimentary Geology and Paleobiology: An integrated paleomagnetic, isotopic, and stratigraphic test of the inertial interchange true polar wander hypothesis, Bitter Springs Stage, Australia (2006-2010; $239,995).

Courses Taught

FRS 161 *Earth: Crops, Culture, and Climate) [Fall '19(17), Fall '20(7), with F.J. Simons]:* In this Freshman Seminar, you combine satellite remote sensing and geological and geophysical field observations with modeling, interpretation, and reporting, to answer questions on the impact of climate, topography, and geography on agricultural crop production. How is the energy of Earth and the Sun harnessed in its various forms? What is the impact of agriculture and resource extraction on landscapes?and how do climate and topography influence what can be grown, what can be mined, where humans settle? How have civilizations through the ages reconciled opportunity and threat: of fertile volcanoes, powerful rivers, burning forests? In the classroom, around campus, and in the field abroad, using both instruments and your own senses, you gain practical experience collecting data in geographic context. You analyze these data using statistical techniques such as regression and geospatial analysis, while learning the programming language MATLAB. You write a research paper and typeset it in LaTeX. The mandatory week-long Fall Break field trip centers around staying at, and studying, a mid-size Italian olive farm, along with exploration of the geological and archaeological environment nearby. The classroom component of this Freshman Seminar will have graded (bi)weekly assignments built around on-campus data collection, data preparation or analysis, and scientific programming. A significant part of your assessment comes from writing assignments that teach you to communicate your scientific results, and culminate in an original research paper and an oral presentation for an audience of peers, Freshman Seminar alumni, and invited guests from the university community.

FRS 135 (124) *State of the Earth: Shifts and Cycles) [Fall '15(14), Spring '17(14), & Fall '17(10) with F.J. Simons]:* Students combine field observations of the natural world with quantitative modeling and interpretation to answer questions like: How have Earth and human histories been recorded in the geology of Princeton, the Catskills, and France/Spain, and what experiments can you do to query such archives of the past? In the classroom, through problem sets, and around campus, students gain practical experience collecting geological and geophysical data in geographic context, and analyzing these data using statistical techniques such as regression and time series analysis, with the programming language Matlab. During the required one-day trip to the Catskills and week-long Fall break trip to France/Spain, students engage in research projects that focus on the cycles and shifts in Earth's shape, climate, and life that occur now on timescales of days, and have been recorded in rocks over timescales of millions of years. The classroom component of this Freshman Seminar has graded weekly assignments built around on-campus data collection, data

preparation or analysis, and scientific programming. A significant part of your assessment comes from writing assignments that teach you to communicate your scientific results, and culminate in an original research paper and an oral presentation for an audience of peers, Freshman Seminar alumni, and invited guests from the university community.

GEO/WRI 201 *Measuring Climate Change: Methods in Data Analysis & Scientific Writing [Fall '14(11), Fall '16(9), & Fall '18(10) with A.E. Irwin Wilkins]:* In this course, students will use drone-derived photographs and elevation models of landscapes, georeferenced field observations of the natural world, and data mining of the primary literature in combination with quantitative modeling and interpretation to answer questions like: How have ancient climate changes been preserved in modern landscapes and the rock record? What is the difference between climate and weather? How is climate changing now, and how do we measure it? What impact does climate change have on modern human society, and how have humans affected climate change? How do we quantify the uncertainties on measurements of climate change, and how do we communicate these uncertainties to the public? GEO/WRI 201 is designed to help students build on what they learn as freshmen in the Writing Seminars about the values held in common across disciplines–e.g., articulating a compelling question or problem, making an argument based on evidence and analysis, engaging responsibly with sources–and translate them into the context of more advanced and discipline-specific writing projects. In the classroom, on campus field excursions, and on the mandatory eight-day Fall-Break research trip to the American Southwest, students will gain practical experience piloting drones, collecting paleoclimatological and climatological data, and analyzing these data using software and programming languages like ArcGIS and Matlab. Through weekly writing and oral presentation workshops, students will learn to communicate their original research effectively within the formal structure of journal-style scientific writing and the LaTeXtypesetting language. Students will emerge from this class ready to tackle the demands of junior and senior independent work, including how to use the research and writing process recursively to hone their ideas. Field Trips: American Southwest [7 days], Pennsylvania [3 days], Campus [2 afternoons].

FRS 171(187) *Earth's Environments and Ancient Civilizations [Fall '11(15), '12(15), & '13(13) with F.J. Simons]:* In this Freshman Seminar, you will combine field observations of the natural world with mathematics, physics, chemistry and computer science in order to answer questions like: Why are mountains high? Why are some landscapes wetter, drier, smoother, or more jagged than others? How does environmental change alter the course of civilization, and how do civilizations modify their environment? In the classroom, through problem sets, and on campus excursions, you will gain practical experience collecting geological and geophysical data in geographic context, and analyzing these data using software and programming languages like ArcGIS and Matlab. During the required week-long Fall break trip to Cyprus, you will engage in research projects that focus on the interplay between active tectonic landscapes, changing climate, and ancient civilizations. We will help you turn what you learn into three research papers. Scientific writing is an integral part of this course and its assessment. Field Trips: Cyprus [7 days], New York [2 days], Campus [2 afternoons].

FRS 145(9) *Earth's Changing Surface & Climate [Fall '06(19), '07(20), '08(14), & '09(16) with F.J. Simons]:* How does Earth's surface evolve in response to internal (e.g., tectonic), external (e.g., extraterrestrial), and anthropogenic (e.g., engineering and resource use) forcing? This course is composed of weekly 3-hour seminars on the size and shape of Earth in our solar system, topography,

gravity, tectonics, climate and Earth history designed to provide a basic understanding of the processes that shape Earth's surface. We emphasize data collection and analysis using free internet data sources and software such as MatLab and ARCGIS. The centerpiece of the course is a 7 day field trip to the Mono-Inyo Crater system on the south shore of Mono Lake, where students combine geologic observations with quantitative measurements of topography, gravity, and weather to tell a story of Earth surface change in the region. The course culminates in group presentations and written reports that combine original field observations, internet data sources and modern software. Field Trips: Californa [7 days], New York [2 days], Campus [2 afternoons].

GEO/CEE/ENV 370 *Sedimentology – previously GEO 450 Earth Surface Processes [Spring '07(11), '09(9), '10(9), '12(3), '14(15), '16(9), '18(9), '20(8)]:* This course presents a treatment of the physical processes that shape Earth's surface, such as solar radiation, the flow of water (vapor, liquid, and solid) under the influence of gravitational and capillary forces, and deformation of the solid Earth. In particular, the generation, transport, and preservation of sediment in response to these processes is studied in order to better read stories of Earth history in the geologic record and to better understand processes involved in modern and ancient environmental change. Field Trips: Bahamas or New Mexico [8 days], Kentucky [4 days], New York [4 days].

GEO/CEE 373 *Structural Geology [Spring '11(8) with B. Schoene]:* An introduction to the physics and geometry of brittle and ductile deformation in Earth's crust. We consider deformation at scales from atomic to continental, in the context of mountain building, rifting, and the origin of topography. Weekend Field Trips: Kentucky, Pennsylvania, New Jersey, New York.

GEO 506 *Fundamentals of Geosciences II - The Evolution of Earth's Orbit [Spring '08]:* This two week module examines the evolution of Earth's orbit over the last 4.5 Gy. Topics include the length of day, Earth-Moon distance, modulation of the precession parameters and the relationship between Earth's orbit and its radiative balance. *Pangaea [Spring '09]:* This two week module examines the formation and breakup of the Pangaean supercontinent. Topics include paleomagnetic reconstruction of paleogeography, non-dipole magnetic fields, plate tectonics, true polar wander, and the effect of supercontinents on climate and sea level. *The history of Glaciation on Earth [Spring '12]:* This two week module examines each major ice age in Earth history, focussing on boundary conditions, character of ice volume variability, and impact of on the biosphere. *The history of the Appalachian Mountains [Spring '15, Fall '15, Spring '17, Fall '17]:* This two week combines classroom lecture and a 1-2 day field trip to the Catskills (New York) to examine the geological history of the Appalachians, from the formation of Rodinia 1.1 Ga to today.

GEO 538 *Paleoclimatology [Spring '07(6) & Fall '13(10), with M. Bender]:* The course begins with a series of lectures discussing the physical processes that govern Earth's climate, relevant numerical models, and key properties of sediments from which the nature of past climates can be deduced. The next section of the class investigates the major events of Earth's climate history, from the "faint early sun paradox" to global change.

GEO 570 *Sedimentology [Spring '10(3), '12(5), '14(3), '16(1), '18(3)]:* This course shares lectures with GEO 370, but has modified problem sets, no exams, and a major final paper assignment based on the field research conducted during spring break.

GEO 090 *Analyzing Ecological Integrity: An Assessment of Princeton's Natural Areas [Fall '17(8)]:*

Funded by the University's Campus as a Lab program, this course was co-led by Artemis Eyster '19 and Maloof. The course met weekly, focussed on campus field surveys and instrument deployment during the first half of the Fall, and data analysis and report writing during the second half. The ultimate goal of the course is to submit a report to the campus sustainability office describing the change since 1940, current species diversity, stream health, and contribution to Lake Carnegie sedimentation and chemistry of two forest patches slated to be partially developed as part of the University's long term expansion plan.

Princeton Committee Service

2012-2016, 2018→	Undergraduate Departmental Representative
2018→	Chair, Advisory Committee on Athletics and Campus Recreation
*2018→*2020	Faculty Search Committee
2006-2012, 2016-2018	Undergraduate Work Committee
2016-2018	Member, Advisory Committee on Athletics and Campus Recreation
2015	Faculty Search Committee
2014-2016	University Council on Teaching and Learning
2012-2016	Undergraduate Departmental Representative
2012→	Academic Athletic Fellow, Baseball
2011	University Committee for the President's Award for Teaching
2010-2013	University Faculty Committee on the Course of Study
2009-2013	Geosciences Departmental Seminar Coordinator
2011-2012	Faculty Search Committee
2007-2009	Hess Postdoctoral Search Committee

Princeton Student Advising (not including Ph.D. and B.A. students from other Universities that I have advised)

PostDocs

2015-2016	Blake Dyer (Using the distribution of sedimentary facies and water depths around modern carbonate platforms to understand the origin and meaning of upward shallowing carbonate parasequences in the stratigraphic record), *now a postdoctoral fellow at Lamont-Doherty Earth Observatory.*
2009-2013	Kevin Lewis (w/ F. Simons; Testing the orbital hypothesis for climate variability in the Lacustrine Green River Formation & MatStrat: New software for plotting and analyzing stratigraphic data), *now a professor at Johns Hopkins*
2009-2010	Ryan Ewing (The stratigraphic record of aeolian dunes and climate change in the Holocene of White Sands, NM and the Cryogenian of South Australia), *now a professor at Texas A&M.*
2007-2009	Bob Kopp (w/ M.Oppenheimer & F. Simons; Probabilistic assessment of sea level during the last interglacial stage & Magnetofossil evidence for the development of a tropical river-like system in the mid-Atlantic United States during the Paleocene-Eocene thermal maximum), *now a professor at Rutgers University*

Graduate Students

2018 →	Ryan Manzuk (The impact of reef-forming organisms on the Cambrian explosion)
2017 →	Bolton Howes (The cause and timing of the Cretaceous–Paleogene mass extinction)

2016-2019	Pingping Zhao (M.A.;Chemostratigraphic constraints on early Cambrian animal evolution: diagenesis and global correlation)
2013-2019	Akshay Mehra (Ph.D. Serial grinding and 3D imaging of early animal fossils)
2010-2015	Blake Dyer (Ph.D.; Sea level change, climate variability, and coal deposition during glacial-interglacial cycles of the Late Paleozoic Ice Age), *soon to be a professor at University of California, Santa Barbara.*
2009-2014	Jon Husson (Ph.D., with B. Schoene; Constraining rates, timing, and origin of unusual carbon cycle dynamics in the terminal Proterozoic and early Paleozoic Eras), *now a professor at University of Victoria, British Columbia.*
2007-2012	Catherine Rose (Ph.D. 06/05/12; An integrated sedimentological, stratigraphic and geochemical study of the end-Cryogenian ice age in South Australia), *now a professor at the University of St. Andrews, Scotland.*
2006-2011	Nicholas Swanson-Hysell (Ph.D. 09/16/11; Stratigraphic records of paleogeography and global change from two late Proterozoic basins), *now a professor at University of California Berkeley.*
2006-2009	Hoan Bui Dang (Ph.D., with M. Romalis; Ultrahigh sensitivity magnetization measurements with an atomic magnetometer)

Undergraduate Theses

2019→	Stacey Edmondsond '21, JP/ST, *How do periplatformal carbonates record seawater chemistry and diagenesis?*
2019-2020	Alex Cox '20, ST CEE, *Water depth control on stromatolite morphology from Shark Bay, Western Australia*
2016-2019	Emily Geyman '19, JP/ST, Smith-Newton Fellow applicant, *How do modern carbonates record seawater geochemistry and diagenesis?*
2017-2019	Alec Getraer '19, JP/ST, *Does the geometry of branching river networks record climate information at small enough scales? – a Drone-based study.*
Fall 2017	Artemis Eyster '19, JP, *Can remotely sensed variables such as canopy color and density predict the extent of non-native plant invasion on Princeton University Campus?*
2015-2017	Adrian Tasistro-Hart '17, JP/ST, Smith-Newton Fellow, *Astronomically forced hydrology of the late Cretaceous paleotropical Potosí Basin, Bolivia*
2014-2016	Ali Campion '16, JP/ST, Smith-Newton Fellow, *Interpreting the stratigraphy of far-field records of the Late Paleozoic Ice Age: When did glaciation begin?*
Fall 2015	Will van Cleve, JP, *Subglacial regelation calcite as a carbon-isotope filter*
Fall 2015	Mitch Mitchell, JP, *3D reconstruction of pseudomorphs after gypsum: Refining the history of Earth's Early oxygenation*
Fall 2014	Anna van Brummen '16, JP, *Spatial analysis of Lester Park Stromatolites.*
Spring 2014	Yuem Park, JP, *Determining lateral stratigraphic variation using well-log gamma-ray measurements: A case study in the Paradox Formation of the Southwest USA*
Spring 2014	Leticia Bombieri '15, JP, *Porosity of stromatolites from Lagoa Salgada, Rio de Janeiro, Brazil*
2013-2014	Kathleen Ryan '14, ST, *Precision and accuracy of low-cost global positioning augmentation systems.*
2012-2014	Sarah Bluher '14, ST, *An integrated chemostratigraphic approach to understanding the Siluro-Devonian positive carbon isotope excursion. geochronology of intercalated ashes*

2012-2013	Christine Chen '13, ST, *A viscoelastic deformation model from paleoshorelines of Lake Bonneville: Implications for late Pleistocene glacial retreat in the Western U.S.*
Fall 2012	Charlotte Connor '14, JP, *Isotopic and trace element fingerprinting of building stones and concrete in Iron Age to Roman structures from Polis, Cyprus*
2011-2012	Andrew Budnick '13, JP, *Origins of the Elatina Rhythmites and the History of the Earth-Moon Orbit.*
Fall 2011	Christine Chen '13 (JP; Differential GPS and carbon-isotope mapping of submarine channels in the Wonoka Formation of South Austalia)
Spring 2011	Sara Nason '12 (JP; The effects of coastal structures on sand particle size and beach profiles in Pondicherry, India)
Fall 2010	Steven Shonts '12 (JP; Carbon cycling and an ocean anoxic event in the late Nemakit-Daldynian)
2009-2010	Michael Eddy '11 (JP; The tectonic implications of an early Cambrian drop in seawater $^{87}Sr/^{86}Sr$)
2009-2010	Zach Morse '10 (ST; Reinterpretation of the Elatina Rhythmite fold structures: evidence for a seasonal 'Slushball Earth' and giant impact Lunar formation ∼4.4 Ga)
2009-2010	Michael Eddy '11 (JP; Oxidation of the early Cambrian ocean)
2008-2009	Zach Morse '10 (JP; Morphodynamics of an intertidal carbonate platform)
2008-2009	Cristian Proistosescu '09 (ST - Physics; An objective test for orbital forcing of Oligo-Miocene climate)
2007-2008	James Hamm '08 (ST with M. Romalis - Physics; A spin-exchange-relaxation-free atomic magnetometer for paleomagnetism)
Spring 2007	Meredith Wall '08 (JP; Ooid growth, cementation and diagenesis: Joulters Cays, Bahamas)
Spring 2007	James Hamm '08 (JP with M. Romalis - Physics; Frontiers of magnetometry)
Fall 2006	Bamidele Otemuyiwa '08 (JP; Second-order sea-level variations as a test for Neoproterozoic true polar wander)

Undergraduate Lab Work

2020→	Devdigvijay Singh '24 (MAE)
2020	Linda Chen '23 (ELE)
2020	Nishant Singhal '23 (MAE)
2020	Devan Nisson '23 (COS)
2020	Emelio Cano Renteria '23 (CEE)
2018-2019	Stacey Edmonsond '21 (GEO)
2018-2019	Ona Underwood '21 (GEO)
2018	Celia Reina '21 (CEE)
2016-2017	Benjy Getraer '19 (GEO)
2016	Enrique del Castillo '19 (GEO)
2015-2016	Joanna Zhang '19 (EEB)
2015-2016	Artemis Eyster '19 (GEO)
2014-2015	Anna Erkalova '18 (CBE)
2014-2015	Adrian Tasistro-Hart '17 (GEO)
2014-2015	Ray Bartolucci '17 (CBE)

2014	Alexandria Herr '17 (GEO)
2012-2015	Julia Wilcots '16 (CEE)
2012-2014	Ali Campion '16 (GEO)
2012-2013	Collin Edwards '16 (GEO)
2012-2013	Nan 'Jenny' Jiang '16 (ART)
2011-2013	Natalie Saenz '15 (CHM)
2011-2012	Yuem Park '15 (GEO)
2011-2012	Matt Walsh '15 (TBD)
2009-2011	Christine Chen '13 (GEO)
2009-2011	Steven Shonts '12 (GEO)
2009-2011	Jacquie Nesbit '12 (GEO)
2008-2009	Lija Treibergs '11 (GEO)
2008-2009	Tim Keeler '11 (GEO)
2006-2008	Becca Levin '10 (CHM)
2006-2007	Julie Dickerson '10 (ART)
2006-2007	Morgan Fowler '10 (ENV)

Undergraduate FieldWork

2019	Galen Cadley '22 (GEO; Yukon - 5 weeks)
2019	Sarah Brown '23 (GEO; Bolivia - 6 weeks)
2018	Celia Reina '21 (CEE; Italy/Spain - 6 weeks)
2018	Ona Underwood '21 (GEO; Italy/Spain - 2 weeks)
2017-2018	Emily Geyman (GEO; Bahamas & W. Australia - 11 weeks)
2017	Liam O'Connor '20 (GEO; Bahamas - 4 weeks)
2016	Enrique del Castillo (GEO; Labrador - 2 weeks)
2015-2016	Adrian Tasistro-Hart '17 (GEO; Bolivia - 13 weeks)
2015	Ali Campion '16 (GEO; Spain - 6 weeks)
2015	Will van Cleve '17 (GEO; Canadian Rockies - 2 weeks)
2014	Adrian Tasistro-Hart '17 (GEO; Namibia - 8 weeks)
2014	Ray Bartolucci '17 (CBE; Namibia - 8 weeks)
2014	Ali Campion '16 (GEO; England - 6 weeks)
2014	Tamara Pico '14 (CHM; Nevada - 2 weeks & England - 6 weeks)
2013	Ali Campion '16 (GEO; Australia - 8 weeks)
2012	Christine Chen '13 (GEO; Utah 8 weeks)
2012	Ballard Metcalfe '14 (CEE; Utah 8 weeks)
2012	Yuem Park '15 (GEO; Nevada, Utah, Colorado 8 weeks)
2012	Lily Adler '15 (CHM; Nevada, Utah, Colorado 8 weeks)
2011	Christine Chen '13 (GEO; Australia - 10 weeks)
2008	Nora Xu '11 (GEO; Australia - 10 weeks)