JOERG M. SCHAEFER

LAMONT RESEARCH PROFESSOR
ADJUNCT PROFESSOR – FULL FACULTY MEMBER
DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES
90 MORNINGSIDE DR., 2G
NEW YORK, NY-10027, USA

OFFICE AND LABORATORY
LAMONT-DOHERTY EARTH OBSERVATORY OF COLUMBIA UNIVERSITY
PHONE: 1 845 365 8703
EMAIL: schaefer@ldeo.columbia.edu

Professional Appointments

Lamont Research Professor
Lamont-Doherty Earth Observatory of Columbia University 2008-

Adjunct Professor (full faculty member) 2009-
Dept. of Earth and Environmental Sciences, Columbia University

Doherty Associate Research Scientist 2003 - 2008
Lamont-Doherty Earth Observatory of Columbia University

Lamont Postdoctoral Research Fellow 2001 - 2003
Lamont-Doherty Earth Observatory of Columbia University

Postdoctoral Researcher 2000
Earth Sciences, ETH Zuerich

Education

Ph.D. ETH Zuerich, Earth Sciences 1996 – 2000
Dissertation: Reconstruction of landscape evolution and continental paleoglaciations using in-situ cosmogenic nuclides.
Jointly supervised by Profs. R. Wieler, C. Schlüchter, A.N. Halliday at the Department of Earth Sciences, ETH Zürich

Diplom in Physics (Masters) Env. Physics, University of Heidelberg 1995
Thesis: Reconstruction of bio-geochemical trace substance cycles from an alpine ice-core.
Supervisors: Dr. D. Wagenbach, Prof. U. Platt.

International: Exchange student • ERASMUS program (1991-92)
Department of Physics, University of Aix- Marseille III, France.

Bachelor of Physics (1989-91)
Department of Physics, University of Tübingen, Germany

Research Interests

Climate and Glacier Change, Impacts on Society, Ice Sheet (In)Stability and Sea Level Rise; Global Mountain Glacier Sensitivity to Climate; Tsunamis; Glacier Lake Outburst Floods; Geochemistry; Quaternary Geology;

In particular: Greenland Ice Sheet vulnerability; Sea Level Impacts on Coastlines; Global Temperature reconstruction using mountain glaciers; Himalayan Glacier Change and Society; Mega-tsunamis.

Experimental techniques used

Cosmogenic Nuclide Geochemistry; Noble Gas Mass-Spectrometry, Accelerator Mass-Spectrometry, Inductively Coupled Plasma Mass-Spectrometry, Ion-Chromatography.

Publications (refereed full papers; *denotes students, postdocs or junior faculty mentored/co-supervised by Schaefer; 2nd or last authorship refer to senior author role)

1. Schaefer, J.M., Codilean, A.T., Willenbring, J.K., Lu, Z.-T., Keisling, B., Fülöp, R.-H., Val, P., 2022. Cosmogenic nuclide techniques. Nature Reviews Methods Primers 2, 18, 10.1038/s43586-022-00096-9 (Invited).
2. Reynhout, S.A., Kaplan, M.R., Sagredo, E.A., Aravena, J.C., Soteres, R.L., Schwartz, R., Schaefer, J.M., 2022. Holocene glacier history of northeastern Cordillera Darwin, southernmost South America (55°S). Quaternary Research 105, 166-181, 10.1017/qua.2021.45.
3. Schimmelpfennig, I., Schaefer, J.M., Lamp, J., Godard, V., Schwartz, R., Bard, E., Tuna, T., Akçar, N., Schlüchter, C., Zimmerman, S., Team, A., 2022. Glacier response to Holocene warmth inferred from in situ 10Be and 14C bedrock analyses in Steingletscher's forefield (central Swiss Alps). Clim. Past 18, 23-44, 10.5194/cp-18-23-2022.
4. Sagredo, E.A., Reynhout, S.A., Kaplan, M.R., Aravena, J.C., Araya, P.S., Luckman, B.H., Schwartz, R., Schaefer, J.M., 2021. Holocene History of Río Tranquilo Glacier, Monte San Lorenzo (47°S), Central Patagonia. Frontiers in Earth Science 9, 10.3389/feart.2021.813433.
5. Johnson, J.S., Roberts, S.J., Rood, D.H., Pollard, D., Schaefer, J.M., Whitehouse, P.L., Ireland, L.C., Lamp, J.L., Goehring, B.M., Rand, C., 2021b. Deglaciation of Pope Glacier implies widespread early Holocene ice sheet thinning in the Amundsen Sea sector of Antarctica (vol 548, 116501, 2020). EARTH AND PLANETARY SCIENCE LETTERS 576.
6. Johnson, J.S., Pollard, D., Whitehouse, P.L., Roberts, S.J., Rood, D.H., Schaefer, J.M., **2021**. Comparing Glacial-Geological Evidence and Model Simulations of Ice Sheet Change since the Last Glacial Period in the Amundsen Sea Sector of Antarctica. **Journal of Geophysical Research: Earth Surface** n/a, e2020JF005827, https://doi.org/10.1029/2020JF005827.
7. Peltier, C., Kaplan, M., Birkel, S.D., Soteres, R., Sagredo, E., Moreno, P.I., Schwartz, R., Araos, J., Avena, J.C., Schaefer, J.M., **in press**. A large MIS-4 and long MIS-2 glacier maximum on the Southern tip of South America. **Quaternary Science Reviews**.
8. Dubé-Loubert, H., Roy, M., Veillette, J.J., Brouard, E., Schaefer, J.M., Wittmann, H., **in press**. The role of glacial dynamics in the development of ice divides and the Horseshoe

Intersection Zone of the northeastern Labrador Sector of the Laurentide Ice Sheet. **Geomorphology.**

9. Denton, G.H., Putnam, A.E., Russell, J.L., Barrell, D.J.A., Schaefer, J.M., Kaplan, M.R., Strand, P.D., **2021**. The Zealandia Switch: Ice age climate shifts viewed from Southern Hemisphere moraines. **Quaternary Science Reviews** 257, 10.1016/j.quascirev.2020.106771.
10. Keeler, D.G.*, Rupper, S., Schaefer, J.M., **2021**. A first-order flexible ELA model based on geomorphic constraints. **MethodsX** 8, 101173, https://doi.org/10.1016/j.mex.2020. 101173.
11. Braumann, S.M.*, Schaefer, J.M., Neuhuber, S.M., Reitner, J.M., Lüthgens, C., Fiebig, M., **2020**. Holocene glacier change in the Silvretta Massif (Austrian Alps) constrained by a new 10Be chronology, historical records and modern observations. **Quaternary Science Reviews** 245, 106493, https://doi.org/10.1016/j.quascirev.2020.106493.
12. Briner, J.P., Cuzzone, J.K., Badgeley, J.A., Young, N.E., Steig, E.J., Morlighem, M., Schlegel, N.-J., Hakim, G.J., Schaefer, J.M., Johnson, J.V., Lesnek, A.J., Thomas, E.K., Allan, E., Bennike, O., Cluett, A.A., Csatho, B., de Vernal, A., Downs, J., Larour, E., Nowicki, S., **2020**. Rate of mass loss from the Greenland Ice Sheet will exceed Holocene values this century. **Nature** 586, 70-74, 10.1038/s41586-020-2742-6.
13. García, J.-L., Hall, B.L., Kaplan, M.R., Gómez, G.A., De Pol-Holz, R., García, V.J., Schaefer, J.M., Schwartz, R., **2020**. 14C and 10Be dated Late Holocene fluctuations of Patagonian glaciers in Torres del Paine (Chile, 51°S) and connections to Antarctic climate change. **Quaternary Science Reviews** 246, 106541, https://doi.org/10.1016/j.quascirev.2020. 106541.
14. Johnson, J.S., Roberts, S.J., Rood, D.H., Pollard, D., Schaefer, J.M., Whitehouse, P.L., Ireland, L.C., Lamp, J.L., Goehring, B.M., Rand, C., Smith, J.A., **2020**. Deglaciation of Pope Glacier implies widespread early Holocene ice sheet thinning in the Amundsen Sea sector of Antarctica. **Earth and Planetary Science Letters** 548, 116501, https://doi.org/ 10.1016/j.epsl.2020.116501.
15. Wittmeier, H.E.*, Schaefer, J.M., Bakke, J., Rupper, S., Paasche, Ø., Schwartz, R., Finkel, R.C., **2020**. Late Glacial mountain glacier culmination in Arctic Norway prior to the Younger Dryas. **Quaternary Science Reviews** 245, 106461, https://doi.org/10.1016/ j.quascirev.2020.106461.
16. Young, N.E., Lesnek, A.J., Cuzzone, J.K., Briner, J.P., Badgeley, J.A., Balter-Kennedy, A., Graham, B.L., Cluett, A., Lamp, J.L., Schwartz, R., Tuna, T., Bard, E., Caffee, M.W., Zimmerman, S.R.H., Schaefer, J.M., **2020**. Cosmogenic isotope measurements from recently deglaciated bedrock as a new tool to decipher changes in Greenland Ice Sheet size. Clim. Past Discuss. 2020, 1-47, 10.5194/cp-2020-111.
17. Maurer, J.*, Schaefer, J.M., Russell, J.B., Rupper, S., Wangdi, N., Putnam, A., Young, N.E., **2020**. Remote seismic observations of a glacier lake outburst flood in the Himalayas. **Science Advances** 6, 38, eaba3645.
18. Kaplan, M.R., Strelin, J.A., Schaefer, J.M., Peltier, C., Martini, M.A., Flores, E., Winckler, G., Schwartz, R., **2020**. Holocene glacier behavior around the northern Antarctic Peninsula and possible causes. **Earth and Planetary Science Letters** 534, 116077, https://doi.org/10.1016/j.epsl.2020.116077

19. Maurer, J.M.*, Schaefer, J.M., Rupper, S.R., Corley, A., **2019**. Acceleration of ice loss across the Himalayas over the past 40 years. **Science Advances** 5, 10.1126/sciadv.aav7266.
20. Young, N.E., Briner, J.P., Schaefer, J.M., Zimmerman, S., Finkel, R., **2019**. Early Younger Dryas glacier culmination in southern Alaska: Implications for North Atlantic climate change during the last deglaciation. **Geology** 47, 550-554.
21. Schweinsberg, A.D., Briner, J.P., Licciardi, J.M., Bennike, O., Lifton, N.A., Graham, B.L., Young, N.E., Schaefer, J.M., Zimmerman, S.H., **2019**. Multiple independent records of local glacier variability on Nuussuaq, West Greenland, during the Holocene. **Quaternary Science Reviews** 215, 253-271, https://doi.org/10.1016/j.quascirev.2019.05.007
22. Eaves, S.R., Winckler, G., Mackintosh, A.N., Schaefer, J.M., Townsend, D.B., Doughty, A.M., Jones, R.S., Leonard, G.S., **2019**. Late-glacial and Holocene glacier fluctuations in North Island, New Zealand. **Quaternary Science Reviews** 223, 105914, https://doi.org/10.1016/j.quascirev.2019.105914.
23. Lamp, J.L.*, Young, N.E., Koffman, T., Schimmelpfennig, I., Tuna, T., Bard, E., Schaefer, J.M., **2019**. Update on the cosmogenic in situ 14C laboratory at the Lamont-Doherty Earth Observatory. Nuclear **Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms** 456, 157-162, https://doi.org/10.1016/j.nimb.2019.05.064.
24. Strand, P.D., Schaefer, J.M., Putnam, A.E., Denton, G.H., Barrell, D.J.A., Koffman, T.N.B., Schwartz, R., **2019**. Millennial-scale pulsebeat of glaciation in the Southern Alps of New Zealand. **Quaternary Science Reviews** 220, 165-177, https://doi.org/10.1016/j.quascirev.2019.07.022.
25. Young, N.E., Briner, J.P., Miller, G.H., Lesnek, A.J., Crump, S.E., Thomas, E.K., Pendleton, S.L., Cuzzone, J., Lamp, J., Zimmerman, S., Caffee, M., Schaefer, J.M., **2019**. Deglaciation of the Greenland and Laurentide ice sheets interrupted by glacier advance during abrupt coolings. **Quaternary Science Reviews** 229, 106091, https://doi.org/10.1016/j.quascirev.2019.106091.
26. Johnson, J.S., Nichols, K.A., Goehring, B.M., Balco, G., Schaefer, J.M., **2019**. Abrupt mid-Holocene ice loss in the western Weddell Sea Embayment of Antarctica. **Earth and Planetary Science Letters** 518, 127-135, https://doi.org/10.1016/j.epsl.2019.05.002.
27. Svendsen, J.-I., Haflidason, H., Henriksen, M., Hovland, M., Mangerud, J., Nazarov, D., Lohne, Ø., Regnell, C., Gyllencreutz, R., Færseth, L.M., Schaefer, **2019,** J.M. Glacier variations and environmental changes over the past 60.000 years in the Polar Urals of Arctic Russia; **Boreas**.
28. Cunningham, M.T., Stark, C.P., Kaplan, M.R., Schaefer, J.M., **2019**. Glacial limitation of tropical mountain height. **Earth Surface Dynamics** 7, 147-169.
29. Dube-Loubert, H., Roy, M., Schaefer, J.M., Clark, P.U., **2018**. Be-10 dating of former glacial Lake Naskaupi (Quebec-Labrador) and timing of its discharges during the last deglaciation. **Quaternary Science Reviews** 191, 31-40.
30. Putnam, A.E., Bromley, G.R.M., Rademaker, K., Schaefer, J.M., **2019**. In situ Be-10 production-rate calibration from a C-14-dated late-glacial moraine belt in Rannoch Moor, central Scottish Highlands. **Quaternary Geochronology** 50, 109-125.

31. Sagredo, E.A., Kaplan, M.R., Araya, P.S., Lowell, T.V., Aravena, J.C., Moreno, P.I., Kelly, M.A., Schaefer, J.M., **2018**. Trans-pacific glacial response to the Antarctic Cold Reversal in the southern mid-latitudes. **Quaternary Science Reviews** 188, 160-166.
32. Tulenko, J.P., Briner, J.R., Young, N.E., Schaefer, J.M., **2018**. Beryllium-10 chronology of early and late Wisconsinan moraines in the Revelation Mountains, Alaska: Insights into the forcing of Wisconsinan glaciation in Beringia. **Quaternary Science Reviews** 197, 129-141.
33. Braumann, S. M.*, Neuhuber, S., Fiebig, M., Schaefer, J. M., Hintersberger, E., and Lüthgens, C., 2018, Challenges in constraining ages of fluvial terraces in the Vienna Basin (Austria) using combined isochron burial and pIRIR225 luminescence dating: **Quaternary International**.
34. Koffman, T. N. *, Schaefer, J. M., Putnam, A. E., Denton, G. H., Barrell, D. J., Rowan, A. V., Finkel, R. C., Rood, D. H., Schwartz, R., and Plummer, M. A., 2017, A beryllium-10 chronology of late-glacial moraines in the upper Rakaia valley, Southern Alps, New Zealand supports Southern-Hemisphere warming during the Younger Dryas: **Quaternary Science Reviews**, v. 170, p. 14-25.
35. Smellie, J., Rocchi, S., Johnson, J., Di Vincenzo, G., and Schaefer, J., 2018, A tuff cone erupted under frozen-bed ice (northern Victoria Land, Antarctica): linking glaciovolcanic and cosmogenic nuclide data for ice sheet reconstructions: **Bulletin of Volcanology**, v. 80, no. 1, p. 12.
36. Kaplan, M., Licht, K., Winckler, G., Schaefer, J., Bader, N., Mathieson, C., Roberts, M., Kassab, C., Schwartz, R., and Graly, J., 2017, Middle to Late Pleistocene stability of the central East Antarctic Ice Sheet at the head of Law Glacier: **Geology**, v. 45, no. 11, p. 963-966.
37. Doughty, A. M., Mackintosh, A. N., Anderson, B. M., Dadic, R., Putnam, A. E., Barrell, D. J., Denton, G. H., Chinn, T. J., and Schaefer, J. M., 2017, An exercise in glacier length modeling: Interannual climatic variability alone cannot explain Holocene glacier fluctuations in New Zealand: **Earth and Planetary Science Letters**, v. 470, p. 48-53.
38. Godbout, P.-M., Roy, M., Veillette, J. J., and Schaefer, J. M., 2017, Cosmogenic ^{10}Be dating of raised shorelines constrains the timing of lake levels in the eastern Lake Agassiz-Ojibway basin: **Quaternary Research**, v. 88, no. 2, p. 265-276.
39. Johnson, J. S., Smith, J. A., Schaefer, J. M., Young, N. E., Goehring, B. M., Hillenbrand, C.-D., Lamp, J. L., Finkel, R. C., and Gohl, K., 2017, The last glaciation of Bear Peninsula, central Amundsen Sea Embayment of Antarctica: Constraints on timing and duration revealed by in situ cosmogenic 14 C and 10 Be dating: **Quaternary Science Reviews**, v. 178, p. 77-88.
40. Martini, M. A., Kaplan, M. R., Strelin, J. A., Astini, R. A., Schaefer, J. M., Caffee, M. W., and Schwartz, R., 2017, Late Pleistocene glacial fluctuations in Cordillera Oriental, subtropical Andes: **Quaternary Science Reviews**, v. 171, p. 245-259.
41. Swanger, K. M., Lamp, J. L., Winckler, G., Schaefer, J. M., and Marchant, D. R., 2017, Glacier advance during marine Isotope stage 11 in the McMurdo dry valleys of Antarctica: **Scientific reports**, v. 7, p. 41433.
42. Schaefer, JM, Finkel, RC, Balco, G, Alley, RB, Caffee, M, Briner, JP, Young, NE, Gow, AJ, Schwartz, R., **2016** "Greenland was nearly ice-free for extended periods during the Pleistocene." **Nature**. 540. (2016): 252-255; featured globally.

43. Young, NE, Briner, JP, Maurer, J, Schaefer, JM. "10Be measurements in bedrock constrain erosion beneath the Greenland Ice Sheet margin." **Geophysical Research Letters**. 43. (2016).
44. Bromley, GR, Putnam, AE, Lowell, TV, Hall, BL, Schaefer, JM. "omment on'Was Scotland deglaciated during the Younger Dryas?'by Small and Fabel (2016)." **Quaternary Science Reviews**. 152. (2016): 203-206.
45. Bromley, GR, Schaefer, JM, Hall, BL, Rademaker, KM, Putnam, AE, Todd, CE, Hegland, M, Winckler, G, Jackson, MS, Strand, PD. "A cosmogenic 10 Be chronology for the local last glacial maximum and termination in the Cordillera Oriental, southern Peruvian Andes: Implications for the tropical role in global climate." **Quaternary Science Reviews**. 148. (2016): 54-67.
46. Eaves, SR, Mackintosh, AN, Anderson, BM, Doughty, AM, Townsend, DB, Conway, CE, Winckler, G, Schaefer, JM, Leonard, GS, Calvert, AT. "The Last Glacial Maximum in the central North Island, New Zealand: palaeoclimate inferences from glacier modelling." **Climate of the Past**. 12. (2016): 943-960.
47. Kaplan, M, Schaefer, J, Strelin, J, Denton, G, Anderson, R, Vandergoes, M, Finkel, R, Schwartz, R, Travis, S, Garcia, J. "Patagonian and southern South Atlantic view of Holocene climate." **Quaternary Science Reviews**. 141. (2016): 112-125.
48. Maurer, J.*, Rupper, S., and Schaefer, J. M., published as discussion paper, Quantifying ice loss in the eastern Himalayas since 1974 using declassified spy imagery: **The Cryosphere**.
49. Eaves, S. R., Mackintosh, A. N., Anderson, B. M., Doughty, A. M., Townsend, D. B., Conway, C. E., Winckler, G., Schaefer, J. M., Leonard, G. S., and Calvert, A. T., published as discussion paper, The Last Glacial Maximum in central North Island, New Zealand: palaeoclimate inferences from glacier modelling: **Climate of the Past**.
50. Kaplan, M. R., Schaefer, J. M., Strelin, J. A., Denton, G. H., Anderson, R. F., Vandergoes, M. J., Finkel, R. C., Schwartz, R., Travis, S. G., Garcia, J. L., Martini, M., and Nielsen, S. R., in press, Patagonian and southern South Atlantic view of Holocene climate: **Quaternary Science Reviews**.
51. Schaefer, J. M., Winckler, G., Blard, P.-H., Balco, G., Shuster, D. L., Friedrich, R., Jull, A. T., Wieler, R., and Schluechter, C., 2016, Performance of CRONUS-P–A pyroxene reference material for helium isotope analysis: **Quaternary Geochronology**, v. 31, p. 237-239.
52. Eaves, S. R., Mackintosh, A. N., Winckler, G., Schaefer, J. M., Alloway, B. V., and Townsend, D. B., 2016, A cosmogenic 3He chronology of late Quaternary glacier fluctuations in North Island, New Zealand (39° S): **Quaternary Science Reviews**, v. 132, p. 40-56.
53. Young, N. E.*, Schweinsberg, A. D., Briner, J. P., and Schaefer, J. M., 2015b, Glacier maxima in Baffin Bay during the Medieval Warm Period coeval with Norse settlement: **Science Advances**, v. 1, no. 11, p. e1500806.
54. Ramalho, R.S.*, Winckler, G., Madeira, J., Helffrich, G.R., Hipólito, A., Quartau, R., Adena, K., Schaefer, J.M., **2015**. "Hazard potential of volcanic flank collapses raised by new megatsunami evidence". **Science Advances** 1.: e1500456.
55. Schaefer, J M; Putnam, A E; Denton, G H; Kaplan, M R; Birkel, S; Doughty, A C; Kelley, S; Barrell, D J A; Finkel, R C; Winckler, G; Anderson, R F; Ninneman, U S; Barker, S; Schwartz, R; Andersen, B G; Schluechter, C., **2015.** "The Southern Glacial Maximum 65,000 years ago and its Unfinished Termination." **Quaternary Science Reviews**. 114.: 52-60.

56. Seltzer, A.*, Stute, M., Morgenstern, U., Stewart, M., Schaefer, J., **2015**. Mean annual temperature in New Zealand during the last glacial maximum derived from dissolved noble gases in groundwater. **Earth and Planetary Science Letters** 431, 206-216.
57. Borchers, B., Marrero, S., Balco, G., Caffee, M., Goehring, B., Lifton, N., Nishiizumi, K., Phillips, F., Schaefer, J., and Stone, J., 2016, Geological calibration of spallation production rates in the CRONUS-Earth project: **Quaternary Geochronology**, v. 31, p. 188-198.
58. Phillips, F. M., Argento, D. C., Balco, G., Caffee, M. W., Clem, J., Dunai, T. J., Finkel, R., Goehring, B., Gosse, J. C., and Hudson, A. M., 2016a, The CRONUS-Earth project: a synthesis: **Quaternary Geochronology**, v. 31, p. 119-154.
59. Phillips, F. M., Kelly, M. A., Hudson, A. M., Stone, J. O., Schaefer, J., Marrero, S. M., Fifield, L. K., Finkel, R., and Lowell, T., 2016b, CRONUS-Earth calibration samples from the Huancané II moraines, Quelccaya Ice Cap, Peru: **Quaternary Geochronology**, v. 31, p. 220-236.
60. Doughty, A M*; Schaefer, J M; Putnam, A E; Denton, G H; Kaplan, M R; Barrell, D J A; Andersen, B G; Kelley, S A; Finkel, R C; Schwartz, R. **2015** "Mismatch of glacier extent and summer insolation in Southern Hemisphere mid-latitudes." **Geology**: G36477 1.
61. Krusic, P J; Cook, E R; Dukpa, D; Putnam, A; Rupper, S; Schaefer, J M., **2015**; "638 years of summer temperature variability over the Bhutanese Himalaya." **Geophysical Research Letters**. doi:101002/2015GL063566.
62. Bromley, G R M*; Hall, B L; Thompson, W; Kaplan, M R; Garcia, J L; Schaefer, J M., **2015;** "Late glacial fluctuations of the Laurentide Ice Sheet in the White Mountains of Maine and New Hampshire, USA." **Quaternary Research** 83, 522-530.
63. Lifton, N; Caffee, M; Finkel, R; Marrero, S; Nishiizumi, K; Phillips, F; Goehring, B; Gosse, J; Stone, J; Schaefer, J M; Theriault, B; Jull, A J T; Fifield, K. **2015,** "In situ cosmogenic nuclide production rate calibration for the CRONUS-Earth project from Lake Bonneville, Utah, shoreline features." Quaternary **Geochronology**. doi:101016/jquageo201411002.
64. Phillips, F.M., Argento, D.C., Balco, G., Caffee, M.W., Clem, J., Dunai, T.J., Finkel, R., Goehring, B., Gosse, J.C., Hudson, A.M., Jull, A., Kelly, M., Kurz, M., Lal, D., Lifton, N., Marrero, S., Nishiizumi, K., Reedy, R., Schaefer, J., Stone, J., Swanson, T., Zreda, M., **2015**. The CRONUS-Earth project: a synthesis. **Quaternary Geochronology**, doi:10.1016 /j.quageo.2015.1009.1006.
65. Blard, P H; Balco, G; Burnard, P G; Farley, K A; Fenton, C R; Friedrich, R; Jull, A J T; Niedermann, S; Pik, R; Schaefer, J M; Scott, EM; Shuster, D L; Stuart, F M; Stute, M; Tibari, B; Winckler, G; Zimmermann, L., **2014,** "An inter-laboratory comparison of cosmogenic 3He and radiogenic 4He in the CRONUS-P pyroxene standard." Quaternary Geochronology. doi:101016/jquageo201408004.
66. Borchers, B; Marrero, S; Balco, G; Caffee, M; Goehring, B; Lifton, N; Nishiizumi, K; Phillips, F; Schaefer, J M; Stone, J. **2015;** "Geological calibration of spallation production rates in the CRONUS-Earth Project." **Quaternary Geochronology**: doi:101016/jquageo201501009.
67. Johnson, J.S.*, Bentley, M., Smith, J.A., Finkel, R.C., Rood, D.H., Gohl, K., Balco, G., Larter, R.D., Schaefer, J.M., **2014**. Rapid Thinning of Pine Island Glacier in the Early Holocene. **Science,** 343(6174): 999-1001.
68. Kelley, S.*; Kaplan, M R; Schaefer, J M; Andersen, B G; Barrell D J A;, Putnam, A E; Denton, G H; Schwartz, R; Finkel, R C; Doughty, A M. **2014;** "High-precision 10Be chronology of

moraines in the Southern Alps indicates synchronous cooling in Antarctica and New Zealand 42,000 years ago." **Earth and Planetary Science Letters**. 405: 194-206.

69. Bromley, G.R.M.*, Winckler, G., Schaefer, J.M., Kaplan, M.R., Licht, K.J., Hall, B.L., 2014. Pyroxene separation by HF leaching and its impact on helium surface-exposure dating. **Quaternary Geochronology** 23, 1-8.
70. Bromley, G.R.M.*, Putnam, A.E., Rademaker, K.M., Lowell, T.V., Schaefer, J.M., Hall, B., Winckler, G., Birkel, S.D., Borns, H.W., **2014**. Younger Dryas deglaciation of Scotland driven by warming summers. **Proceedings of the National Academy of Sciences of the United States of America** 111, 6215-6219
71. Strelin, J; Kaplan, M R; Vandergoes, M; Denton, G H; Schaefer, J M; **2014**. Holocene Glacier History of the Lago Argentino Basin, Southern Patagonian Icefield. **Quaternary Science Reviews** 101, 124-145.
72. Kelly, M A; Lowell, T V; Applegate, P J; Phillips, F M; Schaefer, J M; Smith, C A; Kim, H; Leonard, K C; Hudson, A M**; 2013**. A locally calibrated, late glacial 10Be production rate from a low-latitude, high-altitude site in the Peruvian Andes. **Quaternary Geochronology**, doi:10.1016/j.quageo.2013.10.007
73. Young, N.E.*, Schaefer, J.M., Goehring, B., Lifton, N., Schimmelpfennig, I., Briner, J.P., 2014. West Greenland and global in situ C-14 production-rate calibrations. **Journal of Quaternary Science** 29, 401-406.
74. Schimmelpfennig, I.*; Schaefer, J M; Putnam, A E; Koffman, T; Benedetti, L; Ivy-Ochs, S; ASTER Team; Schlüchter, C;. 36Cl production rate from K-spallation in the European Alps (Chironico landslide, Switzerland) **Journal of Quaternary Science,** 29, 407-413**.**
75. Schimmelpfennig, I.*; Schaefer, J M; Akçar, N; Koffman, T; Ivy-Ochs, S; Schwartz, R; Finkel, R C; Zimmerman, S; Schlüchter, C; **2014**. A chronology of Holocene and Little Ice Age glacier culminations of the Steingletscher, CentralAlps, Switzerland, based on high-sensitivity beryllium-10 moraine dating. **Earth and Planetary Science Letters**, 393: 220-230.
76. Goehring, B M.*; Schimmelpfennig, I; Schaefer, J M; **2014**. Capabilities of the Lamont–Doherty Earth Observatory in situ 14C extraction laboratory updated. **Quaternary geochronology**, 19: 194-197.
77. Kaplan, M R.*; Schaefer, J M; Denton, G H; Doughty, A M; Barrell, D J A; Chinn, T J H; Putnam, A E; Andersen, B G; Mackintosh, A; Finkel, R C; Schwartz, R; Anderson, B;, **2013**. The anatomy of long-term warming since 15 ka in New Zealand based on net glacier snowline rise. **Geology,** 41(8): 887-890.
78. Putnam, A E.*; Schaefer, J M; Denton, G H; Barrell, D J A; Andersen, B G; Koffman, T N B; Rowan, A V; Finkel, R C; Rood, D H; Schwartz, R; Vandergoes, M J; Plummer, M A; Brocklehurst, S H; Kelley, S E; Ladig, K L; 2013a. Warming and glacier recession in the Rakaia valley, Southern Alps of New Zealand, during Heinrich Stadial 1. **Earth and Planetary Science Letters**, 382: 98-110.
79. Putnam, A. E.*; Schaefer, J M; Denton, G H; Barrell, D J A; Birkel, S D; Andersen, B G; Kaplan, M R; Finkel, R C; Schwartz, R; Doughty, A M; **2013**b. The Last Glacial Maximum at 44°S documented by a 10Be moraine chronology at Lake Ohau, Southern Alps of New Zealand. **Quaternary Science Reviews**, 62(0): 114-141.
80. Doughty, A.M.*, Anderson, B.M., Mackintosh, A.N., Kaplan, M.R., Vandergoes, M.J., Barrell, D.J.A., Denton, G.H., Schaefer, J.M., Chinn, T.J.H., Putnam, A.E., **2013**. Evaluation

of Lateglacial temperatures in the Southern Alps of New Zealand based on glacier modelling at Irishman Stream, Ben Ohau Range. **Quaternary Science Reviews**, 74: 160-169.

81. Schaefer, J M; Lifton, N., **2013**. Methods. In: Elias S.A. (ed.) The **Encyclopedia of Quaternary Science**, 1: 410-417. Amsterdam: Elsevier.
82. Young, N. E.*; Schaefer, J M; Briner, J P; Goehring, B M; **2013**. A Be-10 production-rate calibration for the Arctic. **Journal of Quaternary Science**, 28(5): 515-526.
83. Balco, G; Schaefer, J M; **2013**. Exposure-age record of Holocene ice sheet and ice shelf change in the northeast Antarctic Peninsula. **Quaternary Science Reviews**, 59: 101-111.
84. Briner, J.P., Young, N.E., Goehring, B.M., Schaefer, J.M., **2012**. Constraining Holocene 10Be production rates in Greenland. **Journal of Quaternary Science**, 27(1): 2-6.
85. Garcia, J.L., Kaplan, M.R., Hall, B.L., Schaefer, J.M., Vega, R.M., Schwartz, R., Finkel, R., **2012**. Glacier expansion in southern Patagonia throughout the Antarctic cold reversal. **Geology**, 40(9): 859-862.
86. Goehring, B.M., Vacco, D.A., Alley, R.B., Schaefer, J.M., **2012**. Holocene dynamics of the Rhone Glacier, Switzerland, deduced from ice flow models and cosmogenic nuclides. **Earth and Planetary Science Letters**, 351: 27-35.
87. Golledge, N.R., Mackintosh, A.N., Anderson, B.M., Buckley, K.M., Doughty, A.M., Barrell, D.J.A., Denton, G.H., Vandergoes, M.J., Andersen, B.G., Schaefer, J.M., **2012**. Last Glacial Maximum climate in New Zealand inferred from a modelled Southern Alps icefield. Quaternary **Science Reviews**, 46: 30-45.
88. Putnam, A.E.*, Schaefer, J.M., Denton, G.H., Barrell, D.J.A., Finkel, R.C., Andersen, B.G., Schwartz, R., Chinn, T.J.H., Doughty, A.M., **2012**. Regional climate control of glaciers in New Zealand and Europe during the pre-industrial Holocene. **Nature Geoscience**, 5(9): 627-630.
89. Rupper, S., Schaefer, J.M., Burgener, L.K., Koenig, L.S., Tsering, K., Cook, E.R., **2012**. Sensitivity and response of Bhutanese glaciers to atmospheric warming. **Geophysical Research Letters**, 39: L19503.
90. Schimmelpfennig, I.*, Schaefer, J.M., Akcar, N., Ivy-Ochs, S., Finkel, R.C., Schluchter, C., **2012**. Holocene glacier culminations in the Western Alps and their hemispheric relevance. **Geology**, 40(10): 891-894.
91. Schimmelpfennig, I.*, Schaefer, J.M., Goehring, B.M., Lifton, N., Putnam, A.E., Barrell, D.J.A., **2012**. Calibration of the in situ cosmogenic 14C production rate in New Zealand's Southern Alps. **Journal of Quaternary Science**, 27(7): 671-674.
92. Sasnett, P., Goehring, B.M., Christie-Blick, N., Schaefer, J.M., **2012**. Do phreatomagmatic eruptions at Ubehebe Crater (Death Valley, California) relate to a wetter than present hydro-climate? **Geophysical Research Letters**, 39(L02401): doi:10.1029/2011GL050130.
93. Goehring, B.M.*, Lohne, O.S., Mangerud, J., Svendsen, J.I., Gyllencreutz, R., Schaefer, J., Finkel, R., **2012**. Late glacial and holocene 10Be production rates for western Norway. **Journal of Quaternary Science** 27, 89-96.
94. Swanger, K.M., Marchant, D.R., Schaefer, J.M., Winckler, G., Head, J.W., **2011**. Elevated East Antarctic outlet glaciers during warmer-than-present climates in southern Victoria Land. **GLOBAL AND PLANETARY CHANGE**, 79(1-2): 61-72.
95. Kaplan, M. R.*, J. A. Strelin, J. M. Schaefer, G. H. Denton, R. C. Finkel, R. Schwartz, A. E. Putnam, M. J. Vandergoes, B. M. Goehring, and S. G. Travis, **2011**, In-situ cosmogenic 10Be

production rate at Lago Argentino, Patagonia: Implications for late-glacial climate chronology, **Earth and Planetary Science Letters**, *309*(1-2), 21-32.

96. Goehring, B.*, J. M. Schaefer, C. Schluechter, N. Lifton, R. Finkel, A. J. T. Jull, and R. B. Alley, **2011**, The Rhone Glacier was smaller than today for most of the Holocene, **Geology**, *39*(7), 679-682.
97. Bromley, G. R. M., Hall, B. L., Schaefer, J. M., Winckler, G., Rademaker, K. M., and Todd, C. E., **2011**. Glacier fluctuations in the southern Peruvian Andes during the late-glacial period, constrained with cosmogenic 3He. **Journal of Quaternary Science** 26, 37-43.
98. Kaplan, M. R.*, Schaefer, J. M., Denton, G. H., Barrell, D. J. A., Chinn, T., Putnam, A. E., Andersen, B. G., Finkel, R. C., Schwartz, R., and Doughty, A. M., **2010**. Glacier retreat in New Zealand during the Younger Dryas Stadial. **Nature** 467, 194-197.
99. Putnam, A. E.*, Denton, G. H., Schaefer, J. M., Barrell, D., Andersen, B. G., Finkel, R., Schwartz, R., Doughty, A. M., Kaplan, M. R., and Schlüchter, C., **2010**. The atmospheric footprint of the Antarctic Cold Reversal in southern middle latitudes. **Nature Geoscience** 3, 700-704.
100. Denton, G. H., Anderson, R. F., Toggweiler, J. R., Edwards, R. L., Schaefer, J. M., and Putnam, A., **2010**. The last glacial termination. **Science** 328, 1652-1656.
101. Goehring, B. M.*, Kelly, M. A., Schaefer, J. M., Finkel, R. C., and Lowell, T. V., **2010**, Evidence for Minimal Erosion Under the Greenland Ice Sheet Through the Last Glacial Cycle from Beryllium-10 Depth Profiles**. Journal of Quaternary Science**, 25, 865-874.
102. Siddall, M., Kaplan, M., Schaefer, J. M., Putnam, A., Kelly, M. A., and Goehring, B., **2010**, Changing influence of Antarctic and Greenlandic temperature records on sea-level over the last glacial cycle. **Quaternary Science Reviews**, v. 29, p. 410-423.
103. Goehring, B.*, Kurz, M., Balco, G., Schaefer, J., Licciardi, J., and Lifton, N. **2010**. A reevaluation of in situ cosmogenic 3He production rates. **Quaternary Geochronology** 5, 410-418.
104. Putnam, A.*, Schaefer, J. M., Barrell, D., Kaplan, M., Denton, G. H., Vandergoes, M., Schwartz, R., Finkel, R. C., Goehring, B., and Kelley, S. M., **2010**. A high precision 10Be production rate calibration in New Zealand's Southern Alps. **Quaternary Geochronology** 5, 392-409.
105. Licciardi, J. M., Schaefer, J. M., Taggart, J. R., and Lund, D. C., **2009**. Holocene Glacier Fluctuations in the Peruvian Andes Indicate Northern Climate Linkages. **Science** 325, 16-77-1679
106. Schaefer, J. M., Denton, G. H., Kaplan, M., Putnam, A., Finkel, R. C., Barrell, d. J. A., Andersen, B. G., Schwartz, R., Mackintosh, A., Chinn, T., and Schlüchter, C., **2009**. High frequency Holocene glacier fluctuations in New Zealand differ from the northern signature. **Science** 324, 622.
107. Bromley, G. R. M., Schaefer, J. M., Winckler, G., Hall, B. L., Todd, C. E., and Rademaker, K. M., **2009**. Relative timing of last glacial maximum and late-glacial events in the central tropical Andes. **Quaternary Science Reviews** 28, 2514-2526.
108. Vermeesch, P., Baur, H., Heber, V. S., Kober, F., Oberholzer, P., Schaefer, J. M., Schlüchter, C., Strasky, S., and Wieler, R., **2009**, Cosmogenic 3He and 21Ne measured in quartz targets after one year of exposure in the Swiss Alps. **Earth and Planetary Science Letters**, v. 284, p. 417-425

109. Balco, G., Briner, J. P., Rayburn, J., Ridge, J. C., and Schaefer, J. M., **2009**, Regional Be-10 production rate calibration for northeastern North America: **Quaternary Geochronology**, 4, 93-107.
110. Rinterknecht, V. R.*, Gorokohvich, Y., Schaefer, J. M., and Caffee, M. W., **2008**, Preliminary 10Be Chronology for the Last Deglaciation of the Western Margin of the Greenland Ice Sheet: **Journal of Quaternary Science**, p. DOI: 10.1002/jqs.1226
111. Schaefer, J. M., Oberholzer, P., Zhizhong, Z., Ivy-Ochs, S., Wieler, R., Baur, H., Kubik, P. W., and Schlüchter, C., **2008**, Cosmogenic beryllium-10 and neon-21 dating of late Pleistocene glaciations in Nyalam, monsoonal Himalayas: **Quaternary Science Reviews**, 27**,** p. 295-311.
112. Kelly, M.A.*, Lowell, T. V., Hall, B. L., Schaefer, J. M., Goehring, B., Alley, R. B., and Denton, G. H., **2008**, A 10Be chronology of late-glacial and Holocene mountain glaciation in the Scoresby Sund region, east Greenland: Implications for seasonality during late-glacial time: **Quaternary Science Reviews**, v. 27, no. 25-26, p. 2273-2282.
113. Niedermann, S., Schaefer, J. M., Wieler, R., and Naumann, R., **2007**, The production rate of cosmogenic 38Ar from calcium in terrestrial pyroxene. **Earth and Planetary Science Letters**, 257, p. 596-608.
114. Schaefer, J.M., Denton, G.H., Ivy-Ochs, S., Kubik, P.W., Barrell, D.J., Phillips, F., Schluechter, C., Andersen, B.G., and Lowell, T.V., **2006**, Near-Synchronous Interhemispheric Termination of the Last Glacial Maximum in Mid-Latitudes: **Science**, 312**,** p. 1510-1513.
115. Balco G. and Schaefer J. M., **2006**, Cosmogenic-nuclide and varve chronologies for the deglaciation of southern New England. **Quaternary Geochronology**, **1,** p. 15-28.
116. Schaefer, J. M., Faestermann, T., Herzog, G., Knie, K., Korschinek, G., Masarik, J., Meier, A., Poutivtsev, M., Rugel, G., Schlüchter, C., Serifiddin, F., Winckler, G., **2006**, Terrestrial 53Mn – A new monitor of Earth surface processes. **Earth and Planetary Science Letters**, 251, p. 334-345.
117. Ivy-Ochs, S., Kerschner, H., Reuther, A., Maisch, M., Sailer, R., Schaefer, J.M., Kubik, P.W., Synal, H.-A., and Schluechter, C., **2006**, The timing of glacier advances in the northern European Alps based on surface exposure dating: GSA Special Paper, 415, p. 43-60
118. Staiger J. W., Marchant D. R., Schaefer J. M., Oberholzer P., Johnson J. V., Lewis A. R., and Schwanger K. M., **2006**, Plio-Pleistocene history of Ferrar Glacier, Antarctica: Implications for climate and ice sheet stability. **Earth and Planetary Science Letters** 243, p. 489-503.
119. Peteet D., Schaefer J. M., and Stute M., **2006**, Enigmatic Eastern Laurentide Ice Sheet Deglaciation. **EOS** 87(15), 151.
120. Lowell, T. V., Fisher, T. G., Comer, G. C., Hajdas, I., Waterson, N., Glover, K., Schaefer, J. M., Rinterknecht, V., Broecker, W. S., Denton, G. H., and Teller, J. T., **2005**. Testing the Lake Agassiz meltwater trigger for the Younger Dryas: **EOS,** 86, no. 40, p. 365-373.
121. Ivy-Ochs, S., Schaefer, J. M., Kubik, P. W., and Synal, A. H., **2004**. Timing of deglaciation on the northern alpine foreland (Switzerland). **Eclogae Helveticae** 97**,** p. 47-55.
122. Oberholzer, P., Baroni, C., Schaefer, J., Orombelli, G., Ivy-Ochs, S., Kubik, P., and Wieler, R., **2003**. Limited Pliocene/Pleistocene glaciation in Deep Freeze Range, Victoria Land, Antarctica, derived from cosmogenic nuclides. **Antarctic Science** 15**,** p. 493-502.

123. Tschudi, S., Schäfer, J. M., Schlüchter, C., Ivy-Ochs, S., Kubik, P. W., and Barrett, P. J., **2003**. Surface Exposure Dating of Sirius Formation at Allan Hills nunatak, Antarctica: New evidence for long-term ice-sheet stability. **Eclogae Geologicae Helvetiae** 96**,** p. 109-114.
124. Tschudi, S., Schäfer, J. M., Zhizhong, Z., Wu, X., Kubik, P. W., and Schluechter, C., **2003**. Glacial advances in Tibet during Younger Dryas? Evidence from cosmogenic 10Be, 26Al, and 21Ne. **Journal of Asian Earth Sciences** 22, p. 301-306.
125. Schäfer, J.M., S. Tschudi, Z. Zhao, X. Wu, S. Ivy-Ochs, R. Wieler, H. Baur, P.W. Kubik, and C. Schluchter, **2002**. The limited influence of glaciations in Tibet on global climate over the past 170000 yr, **Earth and Planetary Science Letters**, 194 (3-4), p. 287-297.
126. Schlüchter, C., Schaefer, J., Ivy-Ochs, S., Tschudi, S., Oberholzer, P., and Wieler, R., **2001**, Alter und Stabilitaet antarktischer Landschaften, in Polar Research as Monitor of Global Change, Winterthur, p. 39-50
127. Masarik, J., M. Frank, J.M. Schäfer, and R. Wieler, **2001**. Correction of in situ cosmogenic nuclide production rates for geomagnetic field intensity variations during the past 800,000 years, **Geochimica et Cosmochimica Acta**, 65, (17), p. 2995-3003.
128. Schäfer J. M., Marchant D. R., Denton G. H., Wieler R., Ivy-Ochs S., and Schluechter C., **2000**. The oldest ice on Earth in Beacon Valley, Antarctica: New evidence from surface exposure dating. **Earth and Planetary Science Letters** 179**,** (1), p. 91-99.
129. Schäfer J. M., Ivy-Ochs S., Wieler R., Leya I., Baur H., Denton G. H., and Schluechter C., **1999**. Cosmogenic noble gas studies in the oldest landscape on earth: surface exposure ages of the Dry Valleys, Antarctica. **Earth and Planetary Science Letters** 167, p. 215-226.
130. Welten K. C., Nishiizumi K., Caffee M. W., Schäfer J.M., and Wieler R., **1999**. Terrestrial ages and exposure ages of Antarctic H-chondrites from Frontier Mountain, North Victoria Land. **Antarctic Meteorite Research** 12, p. 94-107

Google Scholar indices	All	Since 2016
Citations	9151	4764
h-index	52	38
i10-index	113	101

Book Chapters

Schaefer, J.M., **2015**. Glacial Landscape (Cosmogenic Nuclide). In: Rink, W.J., Thompson, J. (Eds.), **Encyclopedia of Scientific Dating Methods**. Springer.

Schaefer, J. M., and Lifton, N., **2006, 2011**, Methods of Cosmogenic Nuclide Dating, *in* Elias, S. A., ed., **Encyclopedia of Quaternary Sciences**: St. Louis, Elsevier, p. 412-419.

Grants funded

Young, N.E.; Schaefer, J.M.; Turrin, M. 'Collaborative Research: Response of the Greenland Ice Sheet to ocean and atmosphere forcing in a changing Arctic system - integrating data and

modeling to quantify rates of change.' NSF ARCSS – Arctic System Science. LDEO Budget k$ 990; Total Science Budget (Univ at Buffalo (lead) & UW Seattle: 4.3 M$); Recommended for funding.

Schaefer, J.M; Young, N.E.; Winckler, G. 'Collaborative Research: GreenDrill: The response of the northern Greenland Ice Sheet to Arctic Warmth - Direct constrains from sub-ice bedrock'. NSF Arctic Natural Sciences #1933927. Total Science Budget (including U Mass; Univ at Buffalo; Penn State): 3.1 M$; Budget for Arctic Field Logistics and Drilling: 3.5 M$. LDEO: $1,522,711; featured in 'Science' as News Story 10.1126/science.369.6499.19.

Kaplan, M.R.; Schaefer, J.M. 'Collaborative Research: Understanding Glacial-Geomorphic-Climatic Changes in the Arid Andes: Cordillera Oriental as a Case Study'. NSF Geomorphology and Landuse Dynamics # 2035479; $ 379,549.

Young, N.E.; Schaefer, J.M.; Winckler, G. 'Collaborative Research: Geological constraints on the disappearance of the Laurentide Ice Sheet.' NSF Arctic Natural Sciences Grant # 1927148; $551,997.

Schaefer, J.M. 'Collaborative Research: A High-sensitivity Beryllium-10 Record from an Ice Core at South Pole'; NSF ANT Glaciology; 2022765; $99,312; Supplement to grant #1443448; $799,244.

Kaplan, M., Schaefer, J.M. A Southern Hemispheric Perspective on Holocene Climate Variability Based on Mountain Glacial Chronologies; NSF Geobiology & Low Temperature Geochemistry; $ 444,939.

Lamp, J., Schaefer, J.M. Collaborative Research: Landscape Evolution in the McMurdo Dry Valleys: Erosion Rates and Real-time Monitoring of Rock Breakdown in a Hyperarid, Subzero Environment; NSF OPP Antarctic Earth Science; $397,630.

Schaefer, J.M., Winckler, G., and Steig, E (UW Seattle). Collaborative Research: A high-sensitivity 10Be and extraterrestrial 3He record from an ice core at South Pole; NSF-OPP; $ 700,100 (CU/Lamont budget; total budget 1.0 M$; Lead PI: Joerg Schaefer).

Young, N. and Schaefer, J.M., Collaborative Research: Ice sheet sensitivity in a changing Arctic system - using geologic data and modeling to test the stable Greenland Ice Sheet hypothesis. NSF-ARcSS; $ 751,359 (CU/Lamont budget; total budget 2.9 M$, Lead PI: Jason Briner, SUNY Buffalo).

Kaplan, M., Schaefer, J.M., Winckler, G.; Collaborative Research: Multidisciplinary analysis of Antarctic blue ice moraine formation and their potential as climate archives over multiple glacial cycles; NSF-OPP; $ 294,861.

Young, N., Schaefer, J.M., (2014); Collaborative Research: Testing Arctic Ice Sheet Sensitivity to Abrupt Climate Change; NSF-PLR; $ 367,658;

Kaplan. M., Schaefer, J.M. (2013); Collaborative Research: Testing the Orbital Theory of Ice Ages Using Glacial Deposits in Southern South America and Numerical Modeling; NSF-BCS; $ 216,000;

Schaefer, J.M., Gentine, P., Rupper, S.: Cross-Cutting Initiative, EI: 'Glacier Change and Energy-Test case Rhone River Catchment'; $ 30,000.

Schaefer, J.M., Winckler, G. (2013); Collaborative Research: West Antarctic Ice Sheet stability, alpine glaciation, and climate variability: a terrestrial perspective from cosmogenic-nuclide dating in McMurdo Sound; NSF OPP; $ 349,997;

Schaefer, J.M., Cook, E., Rupper, S (University of Utah): (2013): Collaborative Research: Climate and Glacier change in Bhutan: the last millennia, present and future; $ 333,089; NSF Global Change.

Kaplan, M., Schaefer, J.M., Winckler, G., (2012), Terrestrial Geological Context for Glacier Change in the Northeast Antarctica Peninsula; NSF-OPP, $ 424,700.

Schaefer, J.M., Cook, E.: EAGER: Collaborative Research: Climate and Glacier change in Bhutan: the last millennia, present and future; $ 82,801; NSF-EAR.

Kaplan, M., Schaefer, J.M., Denton, G., (2011) Communicating Research to Public Audiences: Shrinking Glaciers: A Chronology of Climate Change; NSF-Division of Research on Learning in Formal and Informal Settings; $ 109,440;

Schaefer, J.M., Winckler, G. (2011) Collaborative Research: Multi-nuclide approach to systematically evaluate the scatter in surface exposure ages in Antarctica and to develop consistent alpine glacier chronologies; NSF-OPP, $ 320,832.

Schaefer, J.M., Denton, G., Kaplan, M., (2010), CRPA: Glaciers: A Chronology of Climate Change, NSF Division on Research and Learning, $ 109,101.

Schaefer, J.M., Winckler, G. (2010), Collaborative Research: Timing and structure of the last glacial maximum and termination in southern Peru: Implications for the role of the tropics in climate change; NSF-EAR, $ 199,139.

Schaefer, J.M. (2010), (Lead PI: Charles Langmuir, Harvard University). Collaborative Research: Constraining Arc Processes through Comprehensive Geochemical Study of the Chilean Southern Volcanic Zone, NSF-EAR, $ 143,479.

Schaefer, J.M., (2009), 'Glacier-Climate-Water' Mini-Conference at Lamont, November 11-13, 2009; NSF-EAR, $ 17,950.

Schaefer, J.M. (2009), Quantifying subglacial erosion rates and exploring pro-glacial bedrock as climate archive by in-situ cosmogenic C-14 and Be-10 techniques; NSF-EAR, $ 187,029;

Kaplan, M., Schaefer, J.M., Denton, G.H., Collaborative Research: A Southern Hemispheric Perspective on Holocene Climate Variability Based on Mountain Glacial Chronologies; NSF-EAR, $ 260,834;

Schaefer, J.M., CRONUS-Supplement – PhD student Brent Goehring (2009), NSF-EAR, $ 86,500.

Schaefer, J.M., Kaplan, M., Denton, G.H., Finkel, R.C. (2008), Collaborative Research: The Pulse of Holocene Glaciations in New Zealand's Southern Alps. NSF P2C2-EAR, $ 290,786.

Schaefer, J.M., (2008), SGER: Quantifying subglacial erosion rates and Timing of Holocene warm periods by in-situ 14C/10Be – A proof of concept. NSF GEOMORPHOLOGY AND LANDUSE DYNAMICS; $ 40,000.

Kaplan, M., Schaefer, J.M., Denton, G.H., (2008), Collaborative Research: A Southern Mid-Latitude Perspective on the Last Ice Age Based on Be-10 Moraine Chronologies. NSF EAR; $ 184,000.

Schlosser, P., Anderson, R. F., Broecker, W. S., Gordon, A., Kaplan, A., Schaefer, J., Seager, R., Ting, M., Cane, M., Cook, E., deMenocal, P., Denton, G., 2008, Abrupt Climate Change in a Warming World: Lessons from Holocene Paleo and Modern Instrumental Records and Model Simulations: NOAA-ARCHES grant # NA08OAR4320912, M$ 2,0 total, Schaefer and Denton share: $ 320,000.

Steckler M., Schaefer J. M., Stark C., Malinverno A., and Seeber L. (2006) Collaborative Research: Uplift and faulting at the transition from subduction to collision - a field and modeling study of the Calabrian Arc. NSF CONTINENTAL DYNAMICS, M$ 2.5.

Winckler G. and Schaefer J. M. (2005) Direct dating of old ice by extraterrestrial 3He and 10Be – a proof of concept. NSF ANTARCTIC GEOLOGY & GEOPHYSICS, $ 74,500.

Schaefer J. M., Commins D., and Anders M. (2004) Quantification of Extensional Fault Processes and Landscape Response using Surface Exposure Dating. NSF TECTONICS, $ 188,128.

Schaefer J. M. (2004) Collaborative Research: Age, Origin and Climatic Significance of Buried Ice in the Western Dry Valleys, Antarctica (lead PI. David Marchant, Boston University). NSF ANTARCTIC GEOLOGY & GEOPHYSICS, $ 111,246.

Schaefer J. M. and Schlosser P. (2004) Collaborative Research: A Proposal for the Cosmic-Ray prOduced NUclide Systematics on Earth (CRONUS-Earth) Project (lead PI: Fred Phillips, New Mexico Tech). NSF EARTH SCIENCES, $ 529,764.

Schaefer J. M. (2004) Retention grant to start-up a Surface Exposure Dating Laboratory at L-DEO. LAMONT-Doherty, $ 190,000.

Schaefer J. M. (2004) Retention grant for a 2 year postdoctoral research position and a 1 year technical assistant position in the Surface Exposure Dating group at L-DEO. LAMONT-DOHERTY EARTH OBSERVATORY, approx. $ 150,000.

Schaefer J.M., (2006) Reconstructing paleoglaciations in New Zealand, Greenland and North America, THE COMER SCIENCE AND EDUCATION FOUNDATION, $ 299,800.

Schaefer J. M. and Schlosser P. (2004) The final implementation step of the L-DEO Surface Exposure Dating Laboratory. THE COMER SCIENCE AND EDUCATION FOUNDATION, $ 131,800.

Broecker W. S., Denton G. H., and Schaefer J. M. (2004) Greenland Younger Dryas Fellowship. THE COMER SCIENCE AND EDUCATION FOUNDATION, $ 50,550.

Broecker W. S. and Schaefer J. M. (2002) Tracing Ice Ages with cosmogenic nuclides. THE COMER SCIENCE AND EDUCATION FOUNDATION , $ 300,000.

Goehring, B., Schaefer, J.M. (2006), Cosmogenic dating of late glacial and Holocene moraines in the Icicle Creek/Enchantment Lakes region, Washington. L-DEO CLIMATE CENTER, $ 6,000.

Schaefer, J. M., Schluechter, C., and Lifton, N. A. (2005). Reconstruction of Holocene warm periods by cosmogenic nuclide burial dating using 10Be and 14C. L-DEO CLIMATE CENTER, $ 5,500.

Kelly, M. A., Barker, S., Schaefer, J. M., and Broecker, W. S. (2005). Equilbrium line altitudes of late-glacial and Holocene ice extents near the Cordillera Vilcanota and Quelccaya Ice Cap, Peru. L-DEO CLIMATE CENTER , $ 4,000.

Commins D. C. and Schaefer J. M. (2004) How fast does climate drive erosion? - Constraining Rates of Colorado Plateau Erosion using Surface Exposure Dating. L-DEO CLIMATE CENTER, $ 6000.

Rinterknecht V. R., Schaefer J. M., Seager R., and Greene A. M. (2004) Comparing climate changes in the tropics and mid/high latitudes

L-DEO CLIMATE CENTER, $ 6000.

Schaefer J. M. (2003) Climate changes recorded in glacigenic surfaces on Long Islands and Manhattan. L-DEO CLIMATE CENTER, $ 5,500.

Schaefer J. M. and Hemming S. (2002) Optically Stimulated Luminescence Dating of Mono Lake Sediments - A complementary dating method to Surface Exposure Dating. L-DEO CLIMATE CENTER, $ 6,000.

Schaefer J. M., Hemming S. R., and Winckler G. (2002) Heinrich Events recorded in Mono Lake moraines? Refining the glacial chronology by new Surface Exposure dates; Field trip to Mono Lake, California. L-DEO CLIMATE CENTER, $ 6,000.

Schlosser P., Hemming S., Schaefer J. M., and Stute M. (2001) Surface Exposure Dating using cosmogenically produced 21Ne. L-DEO INVESTMENT FUND, $ 70,000.

Teaching and Curriculum Development

- Leading the development of the new 'Climate Science Major Program' at Columbia University, together with Suzana Camargo (Lamont Research Professor) and the DEES Curriculum Committee. We establish three independent but coordinated Climate Science Majors: (i) Climate Science - Climate Systems, approved by the CU COI (fully within the Dept. of Earth and Env. Sci. DEES); (ii) Climate Physics and Chemistry (DEES and Dept. for Applied Math and Physcis); (iii) Climate and Civilization (DEES and Sustainable Development). This triple major program will offer Columbia undergraduates a unique spectrum of climate education, from the quantitative aspects and climate modeling over science-based solution analyses of the climate crises to applied climate sciences, including politics, law, climate justice and communication.
- Development of the 'Introduction to Terrestrial Paleoclimate' course, together with Wally Broecker, and teaching this class at Columbia University since 2010 together with Wally, since 2020 solo-teaching (course key: EESCGU4330). This course, open to undergraduates and graduate students, is the sister to 'paleoceanography' and has become a cornerstone of paleoclimate concept education at Columbia;
- Developing 'Changing Ice and Society' 1000 - level course, approved by DEES Curr. Comm.
- Teaching the 'Environmental Science Senior Thesis Seminar' (course key: EESCX3801); this is a two-semester class, teaching and advising undergraduates during their research project and senior thesis writing. The senior thesis is the required 'Capstone' research experience for all our majors in the Dept. of Earth and Environmental Sciences.
- Developing 'Changing Ice - Impacts on Society' a new first year undergraduate course within the 'Columbia core', together with Jonny Kingslake;
- Director of the Lamont-University of Maine student exchange program, established in 2005 (together with George Denton, University of Maine) and Lamont-supervisor of several generations of Masters and PhD students by Profs. George Denton and now Aaron Putnam.
- Adj. Research Scientist at the Climate Change Institute, University of Maine and

Mentoring

- Supervisor of PhD students, most recently Josh Maurer, Allie Balter, Carly Peltier and Tess Walther at Columbia and Sandra Braumann at BOKU, Vienna.
- Mentoring of Postdocs/junior faculty: (i) Jennifer Lamp (2016-today; Lamont postdoc, now Lamont Research Scientist); (ii) Meredith Kelly (2004 – 2008; then Assistant Prof., now

tenured Professor at Dartmouth College); (iii) Irene Schimmelpfennig (2012- ; CNRS research scientist, CEREGE, France); (iv) Aaron Putnam 2009-2015 (now George Denton Assistant Professor at University of Maine); (v) Vincent Rinterknecht (March 2001 – August 2003; then lecturer at the University of St. Andrews, Scotland; now CNRS-research scientist at CEREGE, Aix-Marseille, France); (vi) Deirdre Commins (August 2003 – June 2005; now at Shell); (vii) Michael Kaplan (January 2006 – today, now Lamont Research Professor); (viii) Nicolas Young (2012-today; now Lamont Associate Res. Professor) ; (ix) Ricardo Ramalho (2012 Lamont Postdoctoral Research Scientist; now Lecturer at the University of Lisbon).

- Nomination (successful) of postdoc Nicolas Young for the Blavatnik Foundation Young Scientist award 2015, with an allocated cash prize of $ 30,000: Nicolas is the 2015 winner in the Engineering and Natural Science Competition.
- Recruitment and mentoring of Lamont postdoctoral fellow Benjamin Keisling.
- Director of the University of Maine – Lamont student exchange program (with George Denton, University of Maine); List of students to date: Peter Strand (PhD), Courtney King (PhD); Aaron Putnam (PhD); Kathryn Ladig (Masters); Toby Koffman (PhD); Alice Daughty (Masters); Sam Kelley (Masters); Peter Strand (Masters); Jeniffer Lennon (Masters); Colin Dowey (Masters).
- Co-coordinator of the Lamont – South America student exchange program (together with Mike Kaplan, Jorge Strelin - Argentina and Esteban Sagredo – Chile; List of students to date: Scott Rehynhoud (Catholic University, Santiago, Chile; PhD); Mateo Martini (University of Cordoba, Argentina, PhD), Rodrigo Soteres (Catholic University, Santiago, Chile; PhD); (Paola Aroya (Catholic University, Santiago, Chile).
- Sponsor and host of 'Mary Tharp Fellow' Dr Joanne Johnson, British Antarctic Survey, 2011; resulting in a 2014 Science paper, cooperating and publishing together to present day.
- Sponsor, host and co-supervisor of PhD student Hella Wittmeier, University of Bergen, Norway.

Media and Museum Coverage (recent)

- Interviews and features related to the February 2021 Chamoli-Flood, Himalayan India: (i) **ABC News** https://abcnews.go.com/International/deadly-glacier-break-himalayan-glaciers-collapse-frequently-climate/story?id=75810404; (ii) **Associated Press**: https://apnews.com/article/ climate-climate-change-courts-avalanches-india-7be7a76eea4d497b22609ff3d5194e69; (iii) **Washington Post** Interview by Chris Mooney; https://www.washingtonpost.com/world/2021/02/19/india-himalayas-glaciers-flood/?arc404=true
- '**Science**' News Story of the NSF-funding of the 5-year multi-million GreenDrill project, July 2020, 10.1126/science.369.6499.19
- Interviews and Features related to our 2019 Science Advances Article 'Acceleration of Ice Loss acrsoss the Himalayas over the lat 40 years', by Maurer, Schaefer, Rupper and Corley: Declassified Cold War Technology Shows How Quickly Himalayan Glaciers Are Melting **Environmental News Network – June 24, 2019;** Are the Himalayan Glaciers Endangered?

Labroots – June 24, 2019;
Melting of Himalayan Glaciers Has Accelerated: Study, **India Today – June 24, 2019;** The Ongoing Recession of Himalayan Glaciers Is Alarming**, La Marca (Spain) – June 24, 2019;** Himalayan Glaciers Pull Back Twice as Fast Since the Beginning of the Century **Sustainability Week – (Spain) – June 24, 2019;**
Melting of Himalayan Glaciers Is Speeding Up, **Terra News (Italy) – June 24, 2019**
Glaciers in the Himalayas Are Melting Rapidly; **Energiezukunft (Germany) - June 24, 2019**
Multiple Studies Demonstrate Global Warming Is Melting Glaciers Faster; **World Socialist Website – June 23, 2019**
Himalayan Glaciers Are Melting Rapidly According to American Scientists; **Organization for World Peace – June 23, 2019**
Spy Satellite Images Reveal How Himalayan Glaciers Are Melting at an Alarming Rate; **Earth.org (Hong Kong) – June 23, 2019**
Snow and Ice Are Melting Ever Faster in the Himalayas; **Sustainability Times (France) – June 23, 2019**
Climate Change a Serious Threat to Pakistan; **Naya Daur (Pakistan) – June 23, 2019**
Scientists Discover Glaciers in the Himalayas Are Melting Twice as Fast Since the Turn of the Century; **EFE (Spain) – June 23, 2019** (wire service report; widely syndicated in different media)
The Himalayas Are Wasting Twice as Fast in the Last 20 Years; **SciencePost (France) – June 23, 2019**

- 'American Museum of Natural History (AMNH) – Scientific Bulletin: Shrinking-glaciers a chronology of climate change'; (https://www.amnh.org/explore/videos/earth-and-climate/shrinking-glaciers-a-chronology-of-climate-change), an outreach video for middle and high-school classrooms and the general public. This video was produced by a professional AMNH media team funded by my NSF CRPA grant that presents the basic, visuals and power of our 20-year mountain glacier and climate program to the wider public and the middle- and high-school programs.
- Feature in the Emmy award-winning scientific documentary "How the Earth was made", produced by Pioneer TV, broadcasted on History Channel since December 2007 (http://en.wikipedia.org/wiki/ How_the_Earth_Was_Made).
- Feature in Scientific American, September 24, 2009 (http://www.scientificamerican.com/article.cfm?id=cosmogenic-dating-glaciers-rocks-moraine-climate-change);
- Feature in the New York Times, September 14, 2005, covering our investigations of ice ages in New York City (http://www.nytimes.com/2005/09/14/nyregion/14glacier.html)
- Feature in the scientific docmentary "The good Earth" broadcasted in Japan, January 1, 2006

Leadership

- Lead-PI of the NSF-funded '**GreenDrill'** project, a 5-year campaign mapping the most vulnerable margins of the Greenland Ice Sheet (GrIS) by drilling into sub-ice bedrock and analyzing the cosmogenic nuclide inventory. This project includes a major commitment by

the NSF Arctic field logistic program, and is a stepping-stone for a US-lead Greenland Traverse (GreenT), a mobile research unit on the Greenland Ice Sheet that could serve the international research community for field-based cutting-edge research of the GrIS for the next 20 years. I am the lead of a working group, coordinating the GreenT opportunity within the US and the international research community.

- Founding Director of the **Lamont Cosmogenic Dating Laboratory** (cosmo.ldeo.columbia.edu), and head of the "Glaciers and Climate" Group. This facility consisting of several different laboratories to analyze cosmogenic radionuclides (^{10}Be, ^{26}Al, ^{36}Cl, ^{53}Mn, and ^{14}C) and noble gases (in collaboration with PI Gisela Winckler: ^{3}He and ^{21}Ne) is the backbone of an forefront research group (including Lamont Research Professor (LRP) Kaplan, Assist LRP Young, Assist. Prof Aaron Putnam/U Maine, and postdoctoral research scientist Jennifer Lamp, Staff Associate Schwartz, PhD students (Josh Maurer, Carly Peltier, Max Cunningham) and CU undergraduate students. My group has impact on a wide variety of disciplines within L-DEO and the outside community with studies in Ice-Sheet Dtability and Sea Level ise; Paleoclimate; Mountain Glaciers, Climate and Society; Extreme Events – Tsunamis and Glacier Lake Outburst Floods; Quaternary Geology; NaturalHazards; Geomorphology; Tectonics; Volcanology.
- Co-director of **EI Network 'Climate Justice'**, submitted to the EI network competition.
- Lead PI of the CRPA NSF grant that funded the 'American Museum of Natural History (AMNH) – Scientific Bulletin' (https://www.amnh.org/explore/videos/earth-and-climate/shrinking-glaciers-a-chronology-of-climate-change), that has been part of the live exhibition at AMNH, and is since widely used in classrooms and higher education around the world.
- 10-year member of the CU-Dept. of Earth and Env. Sciences graduate student admissions committee.
- Hosting organizer of the first 'Bhutan Symposia' at Lamont and Columbia University; June 11 & 12, 2013 and July 1, 2014.
- PI of the 'Bhutan Climate and Society' initiative, an integrated research and education program lead by Ed Cook, between Lamont/EI and the Ugyen Wangchuck Institute for Conservation and Enviroment, Bhutan, including two visits to Bhutan, lectures in Bhutan, hosting of bhutanese colleagues at Lamont and lead of a pending NSF proposal.
- Conveiner of AGU session PP53E. Present and Holocene Changes in the Southern Hemisphere Climate; AGU Fall Meeting 2013, San Francisco.
- Conveiner of the INQUA Session # 92 'Inter-hemispheric climate perspectives from high-precision glacier records; INQUA 2011, July 21-27, Berne, Switzerland.
- Excursion-Leader of INQUA post-congress excursion 'Post-03, "Last Glacial Maximum - Lateglacial - Neoglacial / Western Swiss Transect", July 28 - 31, 2011.
- Host and organizer of the NOAA and Lamont Climate Center sponsored Mini-Conference 'The geological record of West Antarctic Ice Sheet Stability', Lamont, April 22-24, 2011.
- Host and organizer of the NSF and NOAA sponsored 'Climate-Glacier-Water' workshop at Lamont, November 2009;
- Co-coordinator of the NOAA-ACCWW mini-conference, Lamont, July 2009.
- Co-conveiner of AGU session PP52: Decadal- to Century-Scale Climate Variability Over the Past Millennium: Evidence From Non-Tree-Ring Archives; AGU Fall meeting 2009.

- Member of the scientific program committee for the Goldschmidt Conference 2008, Vancouver, Canada.
- Co-conveiner of AGU session PP32A: Terrestrial Records of Climate Change: Contributions From in Situ Cosmogenic Nuclides; AGU Fall meeting 2007.
- Organization of the Mini-Conference that initiated the CRONUS initiative (**C**osmogenically P**ro**duced **Nu**clide **S**ystematics on Earth; a large-scale US/EU initiative to improve the physical understanding underlying the production or cosmogenic nuclides in near-surface rocks).; March 17-19, 2002, Lamont-Doherty Earth Observatory;
- Member of the CRONUS-Earth steering committee;
- Co-Chair of the "Ice Age Terminations and other rapid climate changes" session, 12th Annual Goldschmidt Conference, Davos, Switzerland, 2002.
- Co-Coordinator of the Joint Chinese/Swiss/US project 'Paleoglaciations of the Tibetan Plateau', including organization of bilateral science exchange, organization of the expedition 2001 to Nyalam County, South Tibet.
- Co-organizer and lecturer of the summerschool within the NSF funded project "Uplift and faulting at the transition from subduction to collision - a field and modeling study of the Calabrian Arc", Sept 2008.

Awards and External Visibility

- Senior Fellow Award, Center of Climate and Life at Columbia University, since 2017.
- Elected member of the Governing Board of the Society of Fellows and Heyman Center for the Humanities at Columbia University
- Adjunct Research Scientist position at the Climate Change Institute and the School of Earth and Climate Sciences Seminar, University of Maine;
- Visiting Professor at the University of Berne, Switzerland, Institute for Environmental Physics, and Visiting Scientist Awardee of the Hans-Sigrist Foundation at the University of Berne; June 28-July 30, 2013.
- 'Excellence in Mentoring' Award, Lamont-Doherty Earth Observatory, September 2012.
- Medal of ETH Zürich awarding PhD thesis, 2002
- Promotion to 'Lamont Research Professor' and 'Adj. Professor, Dept. Earth and Environmental Sciences, Columbia University', February 2013;
- Promotion to 'Lamont Associate Research Professor', July 2010;
- Early Promotion to 'Doherty Research Scientist', November 2008;
- Promotion to Adjunct Associate Professor at the Department of Earth and Environmental Sciences (full faculty), Columbia University, 2008;
- Offer from University of Bergen, Norway, Associate Professor (tenured) in Quaternary Geology and Paleoclimatology, November 2007.
- Offer from Imperial College, London, UK, senior lectureship position ('Grantham lecturer') at the Grantham Institute of Climate Change, 2007.
- Postdoctoral Fellowship in the Earth, Environmental, and Ocean Sciences of the Lamont-Doherty Earth Observatory 2001-2003.

- Member of the Emmy Noether-program of the German Science Foundation (DFG) 2001-2004
- Referee for: Science, Nature, Nature Geoscience, Earth and Planetary Science Letters, Geochimica et Cosmochimica Acta, Quaternary Science Reviews, Quaternary Geochronology, Terra Nova, G-cubed;

Field experience

- Coordinator of the annual 'Glacier, Climate, Water and Energy' field campaign, Swiss and Austrian Alps; 2013-, including sampling expeditions at Rhone Glacier, Nufenen Pass, Julier Pass, Steingletscher –all Switzerland' and the Silvretta-Austrian Alps.
- Excursion-Leader of INQUA post-congress excursion 'Post-03, "Last Glacial Maximum - Lateglacial - Neoglacial / Western Swiss Transect", July 28 - 31, 2011.
- Coordinator of the quaternary geology program within the 'climate-glaciers-society' initiative in Bhutan, October 2010 and November 2011.
- Coordinator of the chronology section of the quaternary geology field campaigns in New Zealand's Southern Alps, annually since 2001.
- Co-coordinator of the sedimentology/stratigraphy field expeditions to Calabria L-DEO/INGV (Rome, Italy), September 2005. 2006.
- Co-coordinator of the ETH Zürich/University of Berne expeditions to the Tibetan Plateau 1998 (Litang County, East Tibet), 1999 (Tanggula County, Central Tibet); coordinator of the L-DEO expedition 2001 (Nyalam County, Southern Tibet).
- Coordinator of various sampling campaigns in the New York area.
- Member of various field-campaigns in the European Alps, 2002, 2005, since 2009 annually.
- Coordinator of the 1995 ice core drilling campaign of the University of Heidelberg, Colle Gnifetti (4550 m), Monte Rosa, Swiss Alps.

Other Recognition

- Senior Fellow, Columbia Center of Climate and Life at Columbia University, since 2017.
- Adjunct Research Scientist position at the Climate Change Institute and the School of Earth and Climate Sciences Seminar, University of Maine, since 2018.
- Visiting Professor at the University of Berne, Switzerland, Institute for Environmental Physics, and Visiting Scientist Awardee of the Hans-Sigrist Foundation at the University of Berne; June 28-July 30, 2013.
- 'Excellence in Mentoring' Award, Lamont-Doherty Earth Observatory, September 2012.
- Medal of ETH Zürich awarding PhD thesis, 2002