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*Water Research Institute & School of Earth and Environmental Sciences
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*Earth Research Institute (ERI)
University of California Santa Barbara (UCSB)*

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EDUCATION

Donald Bren School of Environmental Science and Management

University of California Santa Barbara, California (CA)

- Ph.D. Title: *Modeling Spatial and Temporal Patterns in Flow and Sediment Transport and Storage in Large, Lowland Rivers*. Advisor: Tom Dunne

June 2003

The Evergreen State College (TESC), Olympia, Washington.

- Area of Concentration: Environmental Science. Bachelors of Arts.

June 1993

Tulane University, New Orleans, Louisiana.

- Area of concentration: International Relations.

1989-1991

CURRENT APPOINTMENTS

Professor

School of Earth and Environmental Sciences, Cardiff University, Wales, UK

2021-

Deputy Director

Water Research Institute, Cardiff University, Wales, UK

2019-

Researcher

Earth Research Institute, University of California Santa Barbara, USA

2017-

PREVIOUS APPOINTMENTS

Reader

School of Earth and Environmental Sciences, Cardiff University, Wales, UK

2020-2021

Senior Lecturer

School of Earth and Environmental Sciences, Cardiff University, Wales, UK

2017-2020

Lecturer

School of Earth and Environmental Sciences, University of St Andrews, Scotland, UK

2007-2017

Associate Researcher

Earth Research Institute, University of California Santa Barbara, USA

2013-2017

Assistant Researcher

Earth Research Institute, University of California Santa Barbara, USA

2003-2013

National Research Council Research Associate (Postdoc), *United States National Academy of Sciences*

2005-2007

- Conducted research on the Sacramento Valley (Supervisor: Edmund Andrews)
National Research Program, United States Geological Survey, Menlo Park.

PEER REVIEWED PUBLICATIONS

<https://singer.eri.ucsb.edu/publications/>

Advisee student and postdoc work denoted by *. Journal is listed for invited revision. In prep papers will be submitted soon.

86. *Rios Gaona, M.F., **Singer, M.B.**, *Asfaw, D.T., MacLeod, D.A., Rosolem, R., Cuthbert, M.O., *Quichimbo, E.A., Michaelides, K.; GIRHAF 1.0: Gridded hI-resolution Rainfall for the Horn of Africa In Prep.
85. *Asfaw, D.T., **Singer, M.B.**, *MacLeod, D.A., Rosolem, R., Cuthbert, M.O., *Rios Gaona, M.F., Michaelides, K.; Multidecadal trends in aridity and drought across Africa In Prep.
84. Washburn, S.J., **Singer, M.B.**, Harrison, L., Hass, L., Clarke, J., Tsui, M.T.K., Blum, J.D., *Mykty, T., Gabet, E., Ulus, Y.; Spatial variation in inundation frequency and duration and Hg dynamics in a large, fluvial wetland In Prep.
83. *Kui, L., *Williams, J., **Singer, M.B.**, Stella, J.C., *Kibler, C.L., Dawson, T.E., *Rohde, M.M., Lambert, A.M., Roberts, D.A.; Increased groundwater dependence of riparian vegetation in response to atmospheric drought conditions In Prep.
82. *Quichimbo, E.A., **Singer, M.B.**, Michaelides, K., Rosolem, R., Cuthbert, M.O. (In Review); The impact of model resolution on the water balance of a dryland basin In Review
81. *Rigby, J.M., Luta, A., Preist, C., Wasonga, O., **Singer, M.B.**, Michaelides, K. (In Review); Exploring technology-enhanced information sharing in the rural drylands of Isiolo County, Kenya In Review
80. *Kipkemoi, I., Michaelides, K., Rosolem, R., **Singer, M.B.** (In Revision); Climatic expression of rainfall on soil moisture dynamics in drylands In Revision
79. Grieve, S.W.D., **Singer, M.B.**, *Chen, S-A., Michaelides, K. (In Review), GDBM: A database of global drainage basin morphology In Review
78. **Singer, M.B.**, Grieve, S.W.D., *Chen, S-A, Michaelides, K. (2024); Climatic controls on the length and shape of the world's drainage basins, *Geophysical Research Letters*, 51, e2024GL111220, doi:10.1029/2024GL111220. [pdf](#). 2024
77. *Lochin, P., Piégay, H., Stella, J.C., Caylor, K.K., Vaudor, L., **Singer, M.B.** (2024); Drivers of spatiotemporal patterns of riparian forest NDVI along a hydroclimatic gradient, *Ecohydrology*, 952:175916, doi:10.1002/eco.2729. [pdf](#). 2024
76. *Cocking, K., **Singer, M.B.**, MacLeod, D., Cuthbert, M.O., Rosolem, R., Muthusi, F., Kimutai, J., Omondi, P., Hassan, A.M., Teshome, A., Michaelides, K. (2024); Locally defined seasonal rainfall timings, totals, and extremes within the Horn of Africa Drylands based on rain gauge data, *Journal of Hydrometeorology*, 25:1845–1861, doi:10.1175/JHM-D-23-0228.1. 2024
75. *Salwey, S., Coxon, G., Pianosi, F., Lane, R., Hutton, C., **Singer, M.B.**, McMillan, H., Freer, J. (2024); Developing water supply reservoir operating rules for large-scale hydrological modelling, *Hydrology and Earth System Sciences (HESS)*, 28(17):4203–4218, doi:10.5194/hess-28-4203-2024. [pdf](#). 2024
74. *Lochin, P., Malherbe, P., Marteau, B., Godfroy, J., Gerle, F., Marshall, J., Puijalón, S., **Singer, M.B.**, Stella, J.C., Piégay, H., Vernay, A. (2024); The Ant and the Grasshopper: contrasting responses and behaviors to water stress of riparian trees along a hydroclimatic gradient, *Science of the Total Environment*, 952:175916, doi:10.1016/j.scitotenv.2024.175916. [pdf](#). 2024
73. *Koppa, A., *Keune, J., Schumacher, D., Michaelides, K., **Singer, M.B.**, Seneviratne, S., Miralles, D.G. (2024); Dryland self-expansion enabled by land–atmosphere feedbacks, *Science*, 385(6712):967–972, doi:10.1126/science.adn6833. [pdf](#) 2024

72. *Rios Gaona, M.F., **Singer, M.B.**, Michaelides, K. (2024); STORM v.2: A simple, stochastic decision-support tool for exploring the impacts of climate, and climate change at, and near the land surface in gauged watersheds, *Geoscientific Model Development*, doi: 10.1038/s41586-024-07702-8. [pdf](#) 2024
71. *Rohde, M.M., Albano, C.M., Huggins, X., Klausmeyer, K.R., Morton, C., Sharman, A., Zaveri, E., Saito, L., Freed, Z., Howard, J.K., Job, N., Richter, H., Toderich, K., Rodella, A-S., Gleeson, T., Huntington, J., Chandanpurkar, H.A., Purdy, A.J., Famiglietti, J.S., **Singer, M.B.**, Roberts, D.A., Caylor, K.K., Stella, J.C. (2024); Groundwater-dependent ecosystem map exposes global dryland protection needs, *Nature*, doi: 10.1038/s41586-024-07702-8. [pdf](#) 2024
70. *Williams, J., Stella, J.C., **Singer, M.B.**, Lambert, A.M., Voelker, S.L., Drake, J.E., Friedman, J.M., Pelletier, L., Kui, L., Roberts, D.A. (2024); Seasonal and species-level water-use strategies and groundwater dependence in dryland riparian woodlands during extreme drought, *Water Resources Research*, 60(4), e2023WR035928, doi:10.1029/2023WR035928. [pdf](#) 2024
69. *Rohde, M.M., Stella, J.C., **Singer, M.B.**, Roberts, D.A., Caylor, K.K., Albano, C.M. (2024); Establishing ecological thresholds and targets for groundwater management, *Nature Water*, doi:10.1038/s44221-024-00221-w. [pdf](#) 2024
68. *McMahon, C., **Singer, M.B.**, Stella, J.C., Caylor, K., Trugman, A., Roberts, D.A. (2024); A river runs through it: robust automated mapping of riparian woodlands and land surface phenology across dryland regions, *Remote Sensing of Environment*, 305, 114056, doi:10.1016/j.rse.2024.114056. [pdf](#) 2024
67. MacLeod, D., Kolstad, E.W., Michaelides, K., **Singer, M.B.** (2024); Sensitivity of rainfall extremes to unprecedented Indian Ocean Dipole events, *Geophysical Research Letters*, 51(5), e2023GL105258, doi:10.1029/2023GL105258. [pdf](#) 2024
66. *Quichimbo, E.A., **Singer, M.B.**, Michaelides, K., Rosolem, R., *MacLeod, D.A., *Asfaw, D.T., Cuthbert, M.O. (2024); Assessing the sensitivity of modelled water partitioning to global precipitation datasets in a data-scarce dryland region, *Hydrological Processes*, 37(12), doi:10.1002/hyp.15047. [pdf](#) 2024
65. Gebrechorkos, S., Peng, J., Dyer, E., Miralles, D.G., Vicente-Serrano, S.M., Funk, C., Beck, H., Asfaw, D., **Singer, M.B.**, Dadson, S. (2023); Global High-Resolution Drought Indices for 1981-2022, *Earth System Science Data*, doi:10.5194/essd-2023-276. [pdf](#) 2023
64. *Kibler, C.L., Trugman, A.T., Roberts, D.A., Still, C.J., Scott, R.L., Caylor, K.K., Stella, J.C., **Singer, M.B.** (2023); Evapotranspiration regulates leaf temperature and respiration in dryland vegetation, *Agricultural and Forest Meteorology*, 339, 109560, doi:10.1016/j.agrformet.2023.109560. [pdf](#) 2023
63. *Salwey, S., Coxon, G., Pianosi, F., **Singer, M.B.**, Hutton, C. (2023); National-scale detection of reservoir impacts through hydrological signatures, *Water Resources Research*, 59(5), e2022WR033893, doi:10.1029/2022WR033893. [pdf](#) 2023
62. *Koppa, A., *Keune, J., *MacLeod, D.A., **Singer, M.B.**, Nietod, R., Gimeno, L., Michaelides, K., Rosolem, R., Otieno, G., Tadege, A., Miralles, D.G. (2023); A Lagrangian analysis of the sources of rainfall over the Horn of Africa Drylands, *Journal of Geophysical Research-Atmospheres*, 128(12), e2022JD038408, doi:10.1029/2022JD038408. [pdf](#) 2023
61. *Warter, M., **Singer, M.B.**, Roberts, D.A., Cuthbert, M.O., *Sabathier, R., Stella, J.C., Caylor, K. (2023); Modeling seasonal vegetation phenology from hydroclimatic drivers for contrasting plant functional groups within drylands of the Southwestern USA, *Environmental Research: Ecology*, doi:10.1088/2752-664X/acb9a0. [pdf](#) 2023
60. *MacLeod, D.A., *Quichimbo, E.A., Michaelides, K., *Asfaw, D.T., Rosolem, R., Cuthbert, M.O., Otenyo, E., Segele, Z., *Rigby, J.M., Otieno, G., Hassaballah, K., Tadege, A., **Singer, M.B.** (2023); Translating seasonal climate forecasts into water balance forecasts for decision making, *PLOS Climate*, 2(3):e0000138, doi: 10.1371/journal.pclm.0000138. [pdf](#) 2023

59. *Asfaw, D.T., **Singer, M.B.**, Rosolem, R., Cuthbert, M.O., *Quichimbo, E.A., *MacLeod, D.A., *Rios Gaona, M.F., Michaelides, K. (2023); StoPET v1.0: A stochastic potential evapotranspiration generator for simulation of climate change impacts, *Geoscientific Model Development*, 16(2), 557-571. doi:10.5194/gmd-16-557-2023. [pdf](#) 2023
58. Michaelides, K., *Chen, S-A., Grieve, S.W.D., **Singer, M.B.**; Reply to: Climate versus tectonics as controls on river profile, *Nature*, 612(7941), E15-E17. doi:1038/s41586-022-05419-0. [pdf](#) 2022
57. Deman, V.M.H., Koppa, A., Waegeman, W., *MacLeod, D.A., **Singer, M.B.**, Miralles, D.G. (2022); Seasonal prediction of Horn of Africa long rains using machine learning: The pitfalls of preselecting correlated predictors, *Frontiers in Water*, 4, doi:10.3389/frwa.2022.1053020. [pdf](#) 2022
56. *Sabathier, R., **Singer, M.B.**, Roberts, D.A., Caylor, K., Stella, J.C., Jaeger, K.L., Olden, J.D. (2022); High-resolution spatiotemporal patterns of flow at the landscape scale in montane non-perennial streams, *River Research and Applications*, doi: 10.1002/rra.4076. [pdf](#) 2022
55. *Chen, S-A., Michaelides, K., Richards, D., **Singer, M.B.** (2022); Exploring exogenous controls on short- versus long-term erosion rates globally, *Earth Surface Dynamics*, 10, 1055–1078, doi:10.5194/esurf-10-1055-2022. [pdf](#) 2022
54. *Adloff, M., **Singer, M.B.**, *MacLeod, D.A., Michaelides, K., *Mehrnegar, N., Hansford, E., Funk, C., Mitchell, D. (2022); Sustained water storage in East African drylands dominated by seasonal rainfall extremes, *Geophysical Research Letters*, 49(21):e2022GL099299, doi:10.1029/2022GL099299. [pdf](#) 2022
53. *Williams, J., Stella, J.C., Voelker, S., Lambert, A., Drake, J.E. Pelletier, L., Friedman, J., Roberts, D., **Singer, M.B.** (2022); Local groundwater decline conditions response of dryland riparian woodlands to climatic drought, *Global Change Biology*, 28(22):6771-6788, doi:10.1111/gcb.16376. [pdf](#) 2022
52. *Rigby, J.M., Yohannis, A., Preist, C., **Singer, M.B.**, Waema, T., Wausi, A., Schien, D., Michaelides, K. (2022); Climate services for the Greater Horn of Africa: Interviews exploring practitioner perspectives from Kenya and beyond, *Climate and Development*, doi:10.1080/17565529.2022.2074350. [pdf](#) 2022
51. *Quichimbo, E.A., **Singer, M.B.**, Michaelides, K., Hobley, D., Rosolem, R., Cuthbert, M.O.; DRYP 1.0: A parsimonious hydrological model of DRYland Partitioning of the water balance, *Geoscientific Model Development*, doi: 10.5194/gmd-14-6893-2021. [pdf](#) 2021
50. *Kibler, C., Schmidt, C., Roberts, D.A., Stella, J.C., Lambert, A., *Kui, L., **Singer, M.B.** (2021); A brown wave of riparian woodland mortality following groundwater declines during the 2012-2019 California drought, *Environmental Research Letters*, 16(8):084030, doi:10.1088/1748-9326/ac1377. [pdf](#) 2021
49. **Singer, M.B.**, *Asfaw, D.T., Rosolem, R., Cuthbert, M.O., *Quichimbo, A., Miralles, D.G., *MacLeod, D., Michaelides, K. (2021); Hourly potential evapotranspiration at 1° grid resolution for the global land surface from 1981- present, *Scientific Data*, 8(224), doi:10.1038/s41597-021-01003-9. [pdf](#) 2021
48. *Sargeant, C.I., **Singer, M.B.** (2021); Local and non-local controls on seasonal variations in water availability and use by riparian trees along a hydroclimatic gradient, *Environmental Research Letters*, 16(8):084018, doi:10.1088/1748-9326/ac1294. [pdf](#) 2021
47. *Rhode, M., Stella, J., Roberts, D., **Singer, M.B.** (2021); Groundwater dependence of riparian woodlands and the disrupting effect of anthropogenically altered streamflow, *Proceedings of the National Academy of Sciences (PNAS)*, 118(25), e2026453118, doi:10.1073/pnas.2026453118. [pdf](#) 2021
46. *Sabathier, R., **Singer, M.B.**, Roberts, D., Caylor, K., Stella, J. (2021); Vegetation response to climatic and geologic controls on water availability in the Southwest USA, *Environmental Research Letters*, 16:064029, doi:10.1088/1748-9326/abfe8c. [pdf](#) 2021
45. *Warter, M., **Singer, M.B.**, Roberts, D., Cuthbert, M.O., *Sabathier, R., Stella, J., Caylor, K. (2021); Onset and propagation of drought into soil moisture and vegetation responses during the 2012-2019 drought in Southern California, *Hydrology and Earth System Science (HESS)*, 25(6), 3713-3729, doi:10.5194/hess-25-3713-2021. [pdf](#) 2021

44. *Mehrnegar, N., Jones, O., **Singer, M.B.**, Schumacher, M., Jagdhuber, T., Scanlon, B.R., Forootan, E. (2021); Exploring groundwater and soil water storage changes across the CONUS at 12.5-km resolution by a Bayesian integration of GRACE data into W3RA, *Science of the Total Environment*, doi:10.1016/j.scitotenv.2020.143579. [pdf](#) 2021
43. *Mayes, M., Caylor, K., **Singer, M.B.**, Stella, J., Roberts, D., Nagler, P. (2020); Climate sensitivity of water use by riparian woodlands at landscape scales, *Hydrological Processes*, 34, 4884-4903, doi:10.1002/hyp.13942. [pdf](#) 2020
42. *Quichimbo, A., **Singer, M.B.**, Cuthbert, M.O. (2020); Characterizing groundwater-surface water interactions in idealized ephemeral stream systems, *Hydrological Processes*, doi:10.1002/hyp.13847. [pdf](#) 2020
41. *Mehrnegar, N., Jones, O., **Singer, M.B.**, Schumacher, M., Bates, P., Forootan, E. (2020); Comparing global hydrological models and combining them with GRACE by dynamic model data averaging (DMDA), *Advances in Water Resources*, doi:10.1016/j.advwatres.2020.103528. [pdf](#) 2020
40. *Sargeant, C.I., **Singer, M.B.**, Vallet-Coulomb, C. (2019); Identification of Source-water Oxygen isotopes in trees Toolkit (ISO-Tool) for deciphering historical water use by forest trees, *Water Resources Research*, 55(12):10954-10975, 138: 103528, doi:10.1029/2018WR024519. [pdf](#) 2019
39. *Chen, S-A., Michaelides, K., Grieve, S.W.D., **Singer, M.B.** (2019); Aridity is expressed in river topography profiles globally, *Nature*, 573: 573–577, doi:10.1038/s41586-019-1558-8. [pdf](#) 2019
38. Washburn, S.J., Blum, J.D., Donovan, P.M., **Singer, M.B.** (2019); Isotopic evidence of methyl- and inorganic mercury photoreduction and retention on particles in surface waters of Central California, USA, *Science of the Total Environment*, 674: 451-461, doi:10.1016/j.scitotenv.2019.04.145. [pdf](#) 2019
37. *Nakamura T., **Singer M.B.**, Gabet E. (2018); Remains of the 19th Century: Deep storage of contaminated hydraulic mining sediment along the Lower Yuba River, California, *Elementa: Science of the Anthropocene*, 6(1), doi: 10.1525/elementa.333. [pdf](#) 2018
36. **Singer, M.B.**, Michaelides, K., Hobbey, D.E.J. (2018); STORM 1.0: A simple, flexible, and parsimonious stochastic rainfall generator for simulating climate and climate change, *Geoscientific Model Development*, 11, 3713-3726, doi: 10.5194/gmd-11-3713-2018. [pdf](#) 2018
35. Phillips, C.B., Hill, K.M., Paola, C., **Singer, M.B.**, Jerolmack, D.J. (2018); Effect of flood hydrograph duration, magnitude, and shape on bed-load transport dynamics, *Geophysical Research Letters*, 45, 8264-8271, doi: 10.1029/2018GL078976. [pdf](#) 2018
This paper was selected as an [AGU Editor's Highlight](#).
34. Michaelides, K., *Hollings, R., **Singer, M.B.**, Nichols, M., Nearing, M. (2018); Spatial and temporal analysis of hillslope-channel coupling and implications for the longitudinal profile in a dryland basin, *Earth Surface Processes and Landforms*, 43: 1608–1621, doi: 10.1002/esp.4340. [pdf](#) 2018
33. *Evans, C., Dritschel, D., **Singer, M.B.** (2018); Modelling subsurface hydrology in floodplains, *Water Resources Research*, 54, 1428-1459, doi: 10.1002/2017WR020827. [pdf](#) 2018
32. **Singer, M.B.**, Michaelides, K. (2017); Deciphering the expression of climate change within the Lower Colorado River basin by stochastic simulation of convective rainfall, *Environmental Research Letters*, 12:104011, doi: 10.1088/1748-9326/aa8e50. [pdf](#) 2017
31. Jaeger, K., Sutfin, N.A., Tooth, S., Michaelides, K., **Singer, M.B.** (2017); Geomorphology and sediment regimes of intermittent rivers and ephemeral streams; in Datry, T., Bonada, N., Boulton, A. (eds.), *Intermittent Rivers and Ephemeral Streams*, pp.21-49, Academic Press, Burlington, doi: 10.1016/B978-0-12-803835-2.00002-4. [pdf](#) 2017
30. Donovan, P.M., Blum, J.D., **Singer, M.B.**, Marvin-DiPasquale, M., Tsui, M.T.K. (2016); Methylmercury degradation and exposure pathways in streams and wetlands impacted by historical mining, *Science of the Total Environment*, 568: 1192-1203, doi: 10.1016/j.scitotenv.2016.04.139. [pdf](#) 2016

29. **Singer, M.B.**, Harrison, L.R., Donovan, P.M., Blum, J.D., Marvin-DiPasquale, M. (2016); Hydrologic indicators of hot spots and hot moments of mercury methylation potential along river corridors, *Science of the Total Environment*, 568: 697-711doi: 10.1016/j.scitotenv.2016.03.005. [pdf](#) 2016
28. Donovan, P.M., Blum, J.D., **Singer, M.B.**, Marvin-DiPasquale, M., Tsui, M.T.K. (2016); Isotopic composition of inorganic and methylmercury downstream of historical gold mining, *Environmental Science and Technology*, 50(4):1691–1702, doi: 10.1021/acs.est.5b04413. [pdf](#) 2016
27. *Sargeant, C.S., **Singer, M.B.** (2016); Sub-annual variability in historical water source use by Mediterranean riparian trees, *Ecohydrology*, 9, 1328-1345, doi: 10.1002/eco.1730. [pdf](#) 2016
*This paper received the [Ignacio Rodriguez-Iturbe Publication Award](#) commending the Best Publication in *Ecohydrology* for 2016.*
26. *Higson, J.L., **Singer, M.B.** (2015); The impact of streamflow hydrographs on sediment supply from terrace erosion, *Geomorphology*, 248:475-488, doi: 10.1016/j.geomorph.2015.07.037. [pdf](#) 2015
*This paper was the 6th most downloaded article in *Geomorphology* from Sep to Dec 2015.*
25. **Singer, M.B.** (2015); Impact scales of fluvial response to management along the Sacramento River, California, USA: Transience versus persistence, in Hudson, P.F. & H. Middlekoop (eds.), *Geomorphic Approaches to Integrated Floodplain Management of Lowland Fluvial Systems in North America and Europe*, pp. 53-85, Springer New York, doi: 10.1007/978-1-4939-2380-9_4. [pdf](#) 2015
24. *Slater, L.J., **Singer, M.B.**, Kirchner, J.W. (2015); Hydrologic versus geomorphic drivers of trends in flood hazard. *Geophysical Research Letters*, 42, 370-376, doi: 10.1002/2014GL062482. [pdf](#) 2015
This paper has received [media attention](#).
It was also selected as an [AGU Universe Publication Highlight \(9 April, Volume 6, Issue 7, 2015\)](#).
23. **Singer, M.B.**, Michaelides, K. (2014); How is topographic simplicity maintained in ephemeral, dryland channels?, *Geology*, 42(12):1091-1094, doi:10.1130/G36267.1. [pdf](#) 2014
This paper has received [media attention](#).
22. **Singer, M.B.**, *Sargeant, C., Piégay, H., Riquier, J., Wilson, R.J.S., *Evans, C.M. (2014); Floodplain ecohydrology: Climatic, anthropogenic, and local physical controls on partitioning of water sources to riparian trees, *Water Resources Research*, 50(5): 4490-4513, doi:10.1002/2014WR015581. [pdf](#) 2014
21. Michaelides, K., **Singer, M.B.** (2014); Impact of coarse sediment supply from hillslopes to the channel in runoff-dominated, dryland fluvial systems, *Journal of Geophysical Research-Earth Surface*, 119(6), doi:10.1002/2013JF002959. [pdf](#) 2014
This paper was selected as an [EOS Research Spotlight](#).
20. **Singer, M.B.**, Aalto, R., James, L.A., *Kilham, N.E., *Higson, J.L., Ghoshal, S. (2013); Enduring legacy of toxic fans via episodic redistribution of California gold mining debris. *Proceedings of the National Academy of Sciences (PNAS)*, 110(46): 18436-18441, doi:10.1073/pnas.1302295110. [pdf](#) 2013
This paper has received [media attention](#).
19. *Slater, L.J., **Singer, M.B.** (2013); The imprint of climate and climate change in alluvial riverbeds: Continental USA, 1950-2011. *Geology*, 41(5):595-598, doi:10.1130/g34070.1. [pdf](#) 2013
This paper won a prize for the best student-led peer-reviewed journal article for 2013 within the Landscape Dynamics Theme of the Scottish Alliance for Geosciences, Society, and the Environment (SAGES).
18. Donovan, P.M, Blum, J.D., Yee, D., Gehrke, G.E., **Singer, M.B.** (2013); An isotopic record of mercury in San Francisco Bay sediment. *Chemical Geology*, 349–350:87-98, doi:10.1016/j.chemgeo.2013.04.017. [pdf](#) 2013
17. **Singer, M.B.**, Stella, J.C., Dufour, S., Piegay, H., Wilson, R.J.S., *Johnstone, L. (2013); Contrasting water-uptake and growth responses to drought in co-occurring riparian tree species. *Ecohydrology*, 6(3):402-412, doi:10.1002/eco.1283. [pdf](#) 2013
16. *Kilham, N.E., Roberts, D., **Singer, M.B.** (2012); Remote sensing of suspended sediment concentration during turbid flood conditions on the Feather River, California—a modeling approach.

- Water Resources Research*, 48, W01521, doi:10.1029/2011WR010391. [pdf](#) 2012
15. *Springborn, M., **Singer, M.B.**, Dunne, T. (2011); Sediment-adsorbed total mercury flux through Yolo Bypass, the primary floodway and wetland in the Sacramento Valley, California. *Science of the Total Environment*, 412-413: 203-213, doi:10.1016/j.scitotenv.2011.10.004. [pdf](#) 2011
 14. **Singer, M.B.** (2010); Transient response in longitudinal grain size to reduced gravel supply in a large river. *Geophysical Research Letters*, 37, L18403, doi:10.1029/2010GL044381. [pdf](#) 2010
 13. *Ghoshal, S., James, L.A., **Singer, M.B.**, Aalto, R. (2010); Channel and floodplain change analysis over a 100-year period: Lower Yuba River, California. *Remote Sensing*, 2(7):1797-1825, doi:10.3390/rs2071797. [pdf](#) 2010
 12. Dunne, T., Constantine, J.A., **Singer, M.B.** (2010); The role of sediment transport and sediment supply in the evolution of river channel and floodplain complexity. *Transactions, Japanese Geomorphological Union*, 31(2):155-170. [pdf](#) 2010
 11. James, L.A., **Singer, M.B.**, *Ghoshal, S., Megison, M. (2009); Historical channel changes in the lower Yuba and Feather Rivers, California: Long-term effects of contrasting river-management strategies. *Geological Society of America Special Paper*, 451:57-81, doi:10.1130/2008.2451(04). [pdf](#) 2009
 10. **Singer, M.B.**, Aalto, R. (2009); Floodplain development in an engineered setting. *Earth Surface Processes and Landforms*, 34(2):291-304, doi:10.1002/esp.1725. [pdf](#) 2009
 9. **Singer, M.B.** (2008); Downstream patterns of bed-material grain size in a large, lowland alluvial river subject to low sediment supply. *Water Resources Research (Rapid Communication)*, 44, W12202, doi:10.1029/2008WR007183. [pdf](#) 2008
 8. **Singer, M.B.** (2008); A new sampler for extracting bed material sediment from sand and gravel beds in navigable rivers. *Earth Surface Processes and Landforms*, 33(14):2277-2284, doi:10.1002/esp.1661. [pdf](#) 2008
 7. **Singer, M.B.**, R. Aalto, James, L.A. (2008); Status of the lower Sacramento Valley flood-control system within the context of its natural geomorphic setting. *Natural Hazards Review*, 9(3):104-115, doi:10.1061/(ASCE)1527-6988(2008)9:3(104). [pdf](#) 2008
 6. James, L.A., **Singer, M.B.** (2008); Development of the lower Sacramento Valley flood-control system: An historical perspective. *Natural Hazards Review*, 9(3):125-135, doi:10.1061/(ASCE)1527-6988(2008)9:3(125). [pdf](#) 2008
 5. **Singer, M.B.** (2007); Influence of major dams on hydrology through the drainage network of the Sacramento Valley, California. *River Research and Applications*, 23(1):55-72, doi:10.1002/rra.968. [pdf](#) 2007
 4. **Singer, M.B.**, Dunne, T. (2006); Modeling the influence of river rehabilitation scenarios on bed material sediment flux in a large river over decadal timescales. *Water Resources Research*, 42, W12415, doi:10.1029/2006WR004894. [pdf](#) 2006
 3. **Singer, M.B.**, Dunne, T. (2004); An empirical-stochastic, event-based program for simulating inflow from a tributary network: Framework and application to the Sacramento River basin, California. *Water Resources Research*, 40, W07506, doi:10.1029/2003WR002725. [pdf](#) 2004
 2. **Singer, M.B.**, Dunne, T. (2004); Modeling decadal bed-material sediment flux based on stochastic hydrology. *Water Resources Research*, 40, W03302, doi:10.1029/2003WR002723. [pdf](#) 2004
 1. **Singer, M.B.**, Dunne, T. (2001); Identifying eroding and depositional reaches of valley by analysis of suspended-sediment transport in the Sacramento River, California. *Water Resources Research*, 37(12):3371-3382, doi:10.1029/2001WR000457. [pdf](#) 2001

INVITED BOOK CHAPTERS

Singer, M.B.; Ecohydrology in floodplains and riparian zones, in Wilcox, B.P., Asbjornsen, H., Smettem, K., Creed, I. (eds.), *Handbook of Terrestrial Ecohydrology*, Routledge. In Prep.

- Singer, M.B.**; Impact scales of fluvial response to management along the Sacramento River, California, USA: Transience versus persistence, in Hudson, P.F. & H. Middlekoop (eds.), *Geomorphic Approaches to Integrated Floodplain Management of Lowland Fluvial Systems in North America and Europe*, pp. 53-85, Springer New York, doi: 10.1007/978-1-4939-2380-9_4. 2015
- Jaeger, K., Sutfin, N.A., Tooth, S., Michaelides, K., **Singer, M.B.**; Geomorphology and sediment regimes of intermittent rivers and ephemeral streams; in Datry, T., Bonada, N., Boulton, A. (eds.), *Intermittent Rivers and Ephemeral Streams*, pp. 21-49, Academic Press, Burlington, doi: 10.1016/B978-0-12-803835-2.00002-4. 2017

NON-PEER REVIEWED CONTRIBUTIONS

- MacLeod, D., Kolstad, E.W., Michaelides, K., Singer, M.B.**; East Africa must prepare for more extreme rainfall during the short rainy season – new study <https://shorturl.at/CaZUS>, *The Conversation* 2024
- Singer, M.B., Michaelides, K., Adloff, M.**; The Horn of Africa has had years of drought, yet groundwater supplies are increasing – why?, <http://bitly.ws/w757>, *The Conversation* 2022
- Singer, M.B.**; How understanding regional rainstorms will help the world manage climate change, <http://bit.ly/2yWv9d4>, *The Conversation* 2017
- Singer, M.B.**; Book Review of ‘Erosion and Sedimentation’ by P.Y. Julien, *Geological Magazine* 2011
- *Tena, A, **Singer, M.B.**, Batalla, R.J.; El uso de FLUVIAL-12 para el diseño y la evaluación de crecidas de mantenimiento en el bajo Ebro, in Ubeda, X., Vericat, D., Batalla, R.J. (eds.), *Avances de la Geomorfología de España*, p. 289-292. 2010
- James, L.A., **Singer, M.B.**, Aalto, R.; Field trip guide and road log: Tracking hydraulic mining sediment in the Sierra Foothills and Sacramento Valley. *Proceedings of the American Association of Geographers Annual Meeting* 2007
- Singer, M.**; Modeling Spatial and Temporal Patterns in Flow and Sediment Transport and Storage in Large, Lowland Rivers. PhD Dissertation, *University of California Santa Barbara* 2003

CURRENT AND PAST TEACHING

Professor, Cardiff University. 2017-

Current Teaching

- BIT059: ‘Frontiers in Water Science’, ~10 students, MSc, 4 × 1-hr lectures, 1 × 2-hr practicals.
- EAT301: ‘Research Dissertation-Water in a Changing World’, ~10 students, MSc, Coordinator.
- EA2312: ‘Hydrology and Earth Surface Processes’, ~160 students, BSc, 6 × 2-hr lectures.
- EA3333: ‘Climate/Hydrologic Cycle-Residential Field Course (Kos, Greece)’, ~50 students, Year 2, 7 residential field days.
- EAT109: ‘Water in the Environment’, ~15 students, MSc, 11 × 2-hr lectures/4 × 3-hr practicals.

Past Teaching

- EA1202: ‘Snowdonia Residential Field Course’, ~40 students, BSc, 6 days.
- EA2219: ‘Hydrologic Cycle-Residential Field Course (SE France)’, ~50 students, Year 2, 5 residential field days.
- EA2219: ‘Water in the Environment’, ~50 students, Year 2, 9 × 2-hr lectures/3 × 3-hr practicals.
- EA3317: ‘Hazards, Risk, and Resilience’, ~100 students, BSc, 3 × 1-hr lectures, 2 × 2-hr practicals.

Lecturer, University of St Andrews. 2007-2017

Past Teaching

- ES1002: ‘Hydrologic Cycle’, ~100 students, Year 1, 5 × 1-hr lectures/2 × 4-hr practical.
- ES2003: ‘Water, Mines, and Contamination’, ~35 students, Year 2, 2 × 1-hr lectures/1 × 4-hr practical.

- ES1001: 'Earth Surface Processes', ~100 students, Year 1, 5 × 1-hr lectures.
- ES5011: 'Water in the Environment', ~10-20 students, Years 3, 4, & 5, 10 × 2-hr lectures / 4 × 3-hr practicals.
- ES3004: 'Processes and Products in Sedimentary Systems', ~20-40 students, Years 3 & 4, 6 × 1-hr lectures.
- ES2003: 'Field Class', ~35 students, Year 2, 6-day residential trip to Rio Tinto, Spain.
- GG4298/ES4297: Ongoing advising and marking of undergraduate student theses (2-3 per year).
- ES4002: Ongoing advising and marking of review essays (2-3 per year).
- ES2901: 'Water Driven Earth Surface Processes', ~25 adult (evening degree) students, 2 × 3-hr lectures.
- ES4008: 'Isotope hydrology of the Rhône Basin, France', Field Class, ~10 students, Year 4, 6-day residential trip.
- EG3021/EG3032: 'Contemporary Environmental Problems: Applications and Solutions', ~20-40 students, Years 3 & 4, 4 × 2 hr lectures / 2 × 3 hr practicals.
- ES3005/GG3201: 'Methods of Measurement/Topog.', ~30 students, Year 3, 2 × 2-hr lectures/1 × 4-hr practical.
- GG3095/GG3266: 'Rivers and Floodplains', ~20-40 students, Year 3 & 4, 10 × 2-hr lectures/1 × 4-hr practical.
- GG2001: 'Regional Geography of the Himalaya', ~70-120 students, Year 2, 9 × 1-hr lectures/1 × 4-hr practical.
- GG2002: 'Catchments and Drainage Basins', ~80-120 students, 4 × 1-hr lectures.
- GG3201: 'Advanced Topics in Physical Geography (Numerical Modeling)', ~5 students, Year 4, 2 × 4-hr practical.
- GG4204: 'Advanced Debates (Fracking)', ~35 students, Year 4, 1 × 4-hr practical.
- GG3201: 'Data Analysis Case Study: Hubbard Brook', ~25 students, Year 3, 3 × 2-hr lectures/1 × 4-hr practical.

INVITED PRESENTATIONS

ICPAC-Stakeholder Workshop	Nairobi, Kenya	2024
OSSREA	Addis Ababa, Ethiopia	2024
CS4RRA Conference	Banju, The Gambia	2024
European Union Horizon Programme	Brussels, Belgium	2024
ICPAC	Nairobi, Kenya	2024
UNICEF	Nairobi, Kenya	2024
Kenyan Red Cross	Nairobi, Kenya	2024
Climate Hazards Center, UC Santa Barbara	Santa Barbara, USA	2024
Water Resources Authority	Nairobi, Kenya	2023
National Drought Management Authority	Nairobi, Kenya	2023
Climate Hazards Center, UC Santa Barbara	Santa Barbara, USA	2023
CIMMYT	Addis Ababa, Ethiopia	2022
Ethiopian Meteorological Institute	Addis Ababa, Ethiopia	2022
World Meteorological Organization Side Event, COP27	Sharm el Sheik, Egypt	2022
European Union Side Event, COP27	Sharm el Sheik, Egypt	2022
Climate Hazards Center, UC Santa Barbara	Santa Barbara, USA	2022
Limmud Bristol Southwest Festival	Bristol, UK	2022
AU-EU-UK Research Collaborations: Emerging Opportunities (virtual)	Cardiff, UK	2021
European Geosciences Union (EGU) Annual Meeting (virtual)	Vienna, Austria	2021
Greater Horn of Africa Climate Outlook Forum-MAM (virtual)	Nairobi, Kenya	2021
Bjerknes Center for Climate Research (virtual)	Bergen, Norway	2020
GW4 Water Security Alliance (virtual)	UK	2020
Keynote, 21st IWA UK Young Water Professionals Conference (virtual)	Cardiff, UK	2020
PWC-Sustainability Division	Oslo, Norway	2019
Institute of Water 2019 Autumn Forum	Cardiff, UK	2019
School of Environmental Science, Simon Fraser University	Burnaby, Canada	2019
Pint of Science	Cardiff, UK	2019
SERDP, US Department of Defense	San Antonio, TX USA	2019
Water Research Institute, Cardiff University	Cardiff, UK	2018
SERDP, US Department of Defense	Washington, DC, USA	2017
Swiss Federal Institute of Technology ETH	Zürich, Switzerland	2017
Swiss Federal Institute for Forest, Snow and Landscape Research WSL	Birmensdorf, Switzerland	2017
School of Engineering and Geosciences, Newcastle University	Newcastle, UK	2017
School of Earth and Ocean Sciences, Cardiff University	Cardiff, UK	2016

Department of Earth & Environmental Sciences, University of Michigan	Ann Arbor, MI	2016
Department of Geography, Simon Fraser University	Burnaby, Canada	2016
Department of Geography and Environment, Southampton University	Southampton, UK	2016
Department of Geography, Loughborough University	Loughborough, UK	2016
École Normale Supérieure de Lyon	Lyon, France	2015
St Anthony Falls Laboratory, University of Minnesota	Minneapolis, MN	2015
IRSTEA, Université Claude Bernard Lyon 1	Lyon, France	2015
ISRivers Conference Workshop on River Science and Management	Lyon, France	2015
Keynote, 'Reclaiming the Sierra 2015: The New Gold Rush'	Sacramento, CA	2015
Rhône-Sacramento River Management Workshop	Berkeley, CA	2014
American Geophysical Union Fall Meeting	San Francisco, CA	2014
Department of Environmental Sciences, University of California Riverside	Riverside, CA	2014
Department of Geosciences, University of Massachusetts Amherst	Amherst, MA	2014
Postgraduate Society, University of St Andrews	St Andrews, UK	2013
CEREGE, Université Aix-Marseilles	Aix-en-Provence, France	2013
Geological and Planetary Sciences, Caltech	Pasadena, CA	2013
School of Geographical and Earth Sciences, University of Glasgow	Glasgow, UK	2013
School of Geosciences, University of Edinburgh	Edinburgh, UK	2012
Department of Civil Engineering, University of Bristol	Bristol, UK	2012
New Mexico Institute of Mining and Technology	Socorro, NM	2012
Geography Society, University of Durham	Durham, UK	2011
United States Geological Survey	Menlo Park, CA	2011
Keynote, 4th International Seminar on Small Catchments Dynamics	Israel	2010
School of Geography, University of Edinburgh	Edinburgh, UK	2010
Department of Geography, University of Durham	Durham, UK	2009
School of Geographical Sciences, University of Bristol	Bristol, UK	2008
Department of Environment and Soil Sciences, University of Lleida	Lleida, Spain	2008
Department of Geography, University of Exeter	Exeter, UK	2008
United States Geological Survey/Sacramento State University	Sacramento, CA	2007
Department of Geography, University of Glasgow	Glasgow, Scotland	2007
Dept. of Land, Air, and Water Resources, University of California Davis	Davis, CA	2005

GRANTS

Total Equivalent Funds Awarded to Date > US\$13M or £10.0M (grant proposals in preparation not listed)

Generalizing plant functional responses to drought stress in the Southwest USA.

Strategic Environmental Research and Development Program, US Department of Defense

• Funded: \$178,284; [M. Singer \(PI\)](#), D. Roberts, K. Caylor, J. Stella. 2022

Somali Language MOOC to Train Journalists to Report on Climate-Related Content in the Horn of Africa Drylands

Cardiff Univ Innovation for All (Welsh Government Scheme)

• Funded: £25,000; [M. Singer \(PI\)](#), L. Morris, M. Cuthbert, A. Quichimbo 2021

Impacts of dynamic, climate-driven water availability on tree water use and stress.

School of Integrated Watershed Sciences H2O'Lyon (France)

• Funded: €60,000; M. Singer, H. Piegay, J. Stella, K. Caylor. 2020

Assessing riparian forest water sources in the Santa Clara River basin (Part 3).

The Nature Conservancy

• Funded: \$43,000; [M. Singer \(PI\)](#), J. Stella, L. Kui 2020

DOWN2EARTH: Translation of climate information into land-based climate services for social adaptation, policy development, and overall resilience to water scarcity in East African drylands.

European Union's Horizon 2020 (Research and Innovation Actions) Program

• Funded: €6,645,663.50; [M. Singer \(PI\)](#) leads large interdisciplinary team from Cardiff, Bristol, VU Amsterdam, East Anglia, Ghent, Hohenheim, ICPAC, SWALIM, Action Aid, Climate Analytics, BBC Media Action, Transparency Solutions, Univ. Nairobi, Addis Ababa Univ. 2020

- Mobile phone App Development for Drought Adaptation in Drylands (MADDAD).*
UKRI Global Challenges Research Fund (GCRF)
 • Funded: £300,000; K. Michaelides, C. Preist, D. Schien, R. Rosolem, D. Mitchell, M. Singer (co-PI), M. Cuthbert, T. Waema, A. Wausi 2019
- Assessing riparian forest water sources in the Santa Clara River basin (Part 2).*
The Nature Conservancy
 • Funded: \$37,300; M. Singer (PI), J. Stella 2019
- Cardiff University-Somaliland Research Collaboration – Network and Scoping Project*
Global Challenges Research Fund (GCRF)-Institutional Grant
 • Funded: £10,000; R. Gale, J. Pickett, M. Singer (co-PI). 2019
- Drought Resilience In East African dryland Regions (DRIER).*
The Royal Society
 • Funded: £497,500; K. Michaelides, M. Singer (co-PI), M. Cuthbert, D. Mitchell, R. Rosolem. 2019
- Impacts of Climate Change on the Water Balance in East African Drylands.*
Global Challenges Research Fund (GCRF)-Institutional Grant
 • Funded: £43,610; K. Michaelides, M. Singer (co-PI), M. Cuthbert, D. Mitchell, R. Rosolem, D. Hobley. 2018
- Water availability to riparian forests under a changing climate.*
Cardiff Undergraduate Research Opportunities Programme (CUROP)
 • Funded: £2,100; M. Singer (PI). 2018
- Groundwater sustainability in Namibia.*
Global Challenges Research Fellowship
 • Funded: £19,460; M. Cuthbert, M. Singer (co-PI). 2018
- Drought Risk in East African Drylands (DREAD).*
Global Challenges Research Fund (GCRF)-Institutional Grant
 • Funded: £35,000; D. Mitchell, K. Michaelides, M. Singer (co-PI). 2018
- Understanding and assessing riparian habitat vulnerability to drought-prone climate regimes on Department of Defense bases in the Southwestern USA.*
Strategic Environmental Research and Development Program, US Department of Defense
 • Funded: \$1,704,236; M. Singer (PI), D. Roberts, K. Caylor, J. Stella. 2018-2022
- Assessing riparian forest water sources in the Santa Clara River basin (Part 1).*
The Nature Conservancy
 • Funded: \$31,871; M. Singer (PI), J. Stella 2018
- Impacts of dynamic, climate-driven water availability on tree water use and health in Mediterranean riparian forests.*
National Science Foundation (Hydrologic Sciences)
 • Funded: \$450,366; M. Singer (PI), J. Stella, K. Caylor. 2017-2020
- Linking basin-scale, stand-level, and individual tree water stress indicators for groundwater-dependent riparian forests in multiple-use river basins.*
National Science Foundation (Geography and Spatial Sciences)
 • Funded: \$449,982 (\$302,235 to UCSB); J. Stella, M. Singer (UCSB PI), D. Roberts. 2017-2020
- Seasonal variations in water availability to riparian trees.*
Observatoire Hommes/Milieux, Vallée du Rhône (France)
 • Funded: €5,000; M. Singer. 2016
- Revealing the impacts of climate on riparian forest water availability and water use through tree-ring $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$.*
Natural Environment Research Council Facilities Grant (Stable Isotope Facility, NIGL)
 • Funded: £72,000 (in-kind support for data generation); M. Singer. 2015

- Detecting subannual climatic fluctuations in water availability through tree ring isotopes.*
Observatoire Hommes/Milieus, Vallée du Rhône (France)
 • Funded: €5,000; M. Singer. 2015
- Early Career Research Exchange Scheme-Tree Ring Isotope Research in France.*
Scottish Alliance for the Geosciences, Environment, and Society (SAGES)
 • Funded: £3,300; M. Singer. 2014
- How do climatic fluctuations affect water availability to and water use by riparian trees?*
The Carnegie Trust for the Universities of Scotland
 • Funded: £2,480; M. Singer. 2014
- Mercury and sediment research within river corridors.*
REG Trust
 • Funded: \$15,000; M. Singer. 2014
- Modeling climate, topography, and substrate controls on water partitioning in river floodplains.*
Natural Environment Research Council Doctoral Training Grant
 • Funded: £70,327 (over 3.5 years); PhD Student: C. Evans; Principal Supervisor: M. Singer. 2013-2017
- Isotopes in floodplain forests along the Rhône corridor.*
Region du Rhône-Alps (France)
 • Funded: €5,700; M. Singer. 2013
- Impacts of climatic variability and anthropogenic impacts on riparian hydrology and forest dynamics.*
Observatoire Hommes/Milieus, Vallée du Rhône (France)
 • Funded: €8,200; M. Singer. 2013
- Which water sources are used by trees in riparian corridors?*
The Carnegie Trust for the Universities of Scotland
 • Funded: £2,500; M. Singer. 2013
- Impacts of climatic variability and anthropogenic impacts on riparian hydrology and forest dynamics: Evidence from isotopes in floodplain vadose and phreatic zones in the Rhône corridor.*
Observatoire Hommes/Milieus, Vallée du Rhône (France)
 • Funded: €6,000; M. Singer. 2013
- Establishing process links between streamflow, sediment transport/storage, and biogeochemical processing of mercury.*
US National Science Foundation (EAR-Geomorphology and Land Use Dynamics).
 • Funded: \$189,162; M. Singer (PI), J.D. Blum, M. Marvin-DiPasquale. 2013-2016
- The signature of drought in river corridors.*
Natural Environment Research Council Doctoral Training Grant
 • Funded: £70,327 (over 3.5 years); PhD Student: C. Sargeant; Principal Supervisor: M. Singer. 2012-2016
- Impacts of climatic variability and anthropogenic impacts on riparian hydrology and forest dynamics: Evidence from isotopes and tree rings in the Rhône corridor.*
Observatoire Hommes/Milieus, Vallée du Rhône (France)
 • Funded: €5,000; M. Singer (PI), R. Wilson. 2012
- Collaborative Exchange with Mark Marvin-DiPasquale, USGS, USA.*
Royal Society of Edinburgh International Exchange Programme
 • Funded: £2,910; M. Singer. 2011
- A hidden record of local hydrologic change in riparian corridors from tree-ring isotopes.*
The Royal Society
 • Funded: £12,600; M. Singer. 2011
- Where do floodplains begin in fluvial networks?*

- US National Science Foundation (National Center for Airborne Laser Mapping).**
 • Funded: ~\$50,000 (in kind support for LiDAR acquisition and processing);
 *Slater, L., M. Singer 2011
- International Travel Grant, Conference Participation, LAG, Israel.*
The Royal Society
 • Funded: £2,110; M. Singer. 2010
- Where do floodplains begin in fluvial networks?*
Natural Environment Research Council Doctoral Training Grant
 • Funded: £67,668 (over 3.5 years); PhD Student: L. Slater; Principal Supervisor: M. Singer. 2010-2014
- Collaborative Exchange with Herve Piegay, CNRS, France.*
Royal Society of Edinburgh International Exchange Programme
 • Funded: £2,436; M. Singer. 2010
- Partitioning modes and rates of sediment flux derived from terrace-channel coupling.*
Natural Environment Research Council Doctoral Training Grant
 • Funded: £66,540 (over 3.5 years); PhD Student: J. Higson; Principal Supervisor: M. Singer. 2009-2013
- Quaternary history of channel change in the Sacramento Valley.*
The Carnegie Trust for the Universities of Scotland
 • Funded: £2,500; M. Singer. 2009
- Using mercury as a tracer for tracking erosion/deposition history of hydraulic mining sediments.*
The Carnegie Trust for the Universities of Scotland
 • Funded: £2,450; M. Singer. 2008
- Sacramento Valley data documentation to support north of Delta off-channel storage project.*
US Bureau of Reclamation Technical Service Center
 • Funded: \$35,000; M. Singer (PI), S. Wright 2006
- Sedimentation/contaminant history in floodplains-Lower Danube River, Romania.*
North Atlantic Treaty Organization (Science for Peace Planning Grant)
 • Funded: €7,000; M. Singer (PI), R. Aalto, D. Baltenau, S. Teodor, C. Roman. 2006
- Sedimentation and contaminant history in the floodplains of the Lower Danube River in Romania.*
North Atlantic Treaty Organization (Collaborative Linkage Grant Program)
 • Funded: €25,000; M. Singer (PI), T. Dunne, R. Aalto, D. Baltenau. 2005
- Tracking hydraulic mining sediments from the Sierra Piedmont into flood bypasses of the Sacramento Valley, CA.*
US National Science Foundation (BCS-Geography and Regional Science).
 • Funded: \$275,000; M. Singer (PI), L.A. James, R. Aalto, T. Dunne. 2005
- Developing and validating a flow and sediment transport model for large-scale restoration on the Sacramento River.*
CALFED Bay-Delta Program.
 • Funded: \$390,252; T. Dunne, M. Singer. 2002
- Hangdewa Landslide Project*
Danish Embassy, Nepal.
 • Funded: Rs.97,394; M. Singer. 1995
- Juneli Jute Net Project*
Danish Embassy, Nepal/UK Overseas Development Agency (ODA)
 • Funded: Rs.2,000,000; M. Singer. 1995

MEDIA COVERAGE OF MY RESEARCH

<https://singer.eri.ucsb.edu/media/>

My research has received media attention from major news outlets (see below). Several stories were re-reported by media outlets around the world:

Science, *USA Today* (front page article in print edition), *LA Times*, *Associated Press*, *Huffington Post*, *Der Spiegel*, *Newsweek*, *Southern California Public Radio* (special in-depth story), *CBS Television News-Sacramento* (special in-depth TV story), *BBC Radio Scotland* (live interview). *BBC Radio 4-Inside Science* (recorded interview). *KVMR Radio-Nevada City* (recorded interview), *PBS-Nova*, *Science Daily*. *Inside Science*, *LiveScience*, *Science News*, *EOS Research Spotlight*, *AGUniverse*, *Phys.Org*, *Circa*, *Science Codex*, *Global Post*, *Environmental News Network*, *Headlines and Global News*, *Science World Report*, *RedOrbit*, *Nature World News*, *TheCourier.co.uk*, *Digital Journal*, *Smithsonian Magazine*, *Mining Examiner*, *GeoBeats*, *European Virtual Institute for Speciation Analysis*, *AllGov*, *Toxicology Student Association*, *UC Berkeley*, *Gold Prospectors Association of America*, *Pacific Sun (Marin, CA)*, *Modern Scientific Issues Blog*, *Wiki Page for Yuba River*, *Washington State University News*. *Strangesounds.org*, *Environmental Risk Managers*, *Environmental Monitor*, *AGUniverse*, *EoS (AGU)*, *NERC Planet Earth Magazine*, *Treehugger*

AWARDS, HONORS, AND COMMISSIONS

Consulting Hydrologist , Impact of Climate Change on Cities, WaterAid	2024
International Consultant , Supporting the Joint Regional Study on Appraisal of Climate Risks on Groundwater Resources in the Horn of Africa, <i>The World Bank</i> (Declined)	2024
Consulting Hydrologist , Recent Flood and Drought Impacts in WaterAid countries, WaterAid	2023
Guest Editor , <i>Frontiers in Climate (Special issue on Climate Services for Africa)</i>	2023
Consulting Hydrologist , Trends in Drought and Exposure Across Africa, WaterAid	2022
Invited Delegate and Speaker , <i>European Union Pavilion Side Event</i> , ' Climate services for adaptation in Sub-Saharan Africa ', <i>COP27, Sharm-el-Sheik</i> ,	2022
Invited Delegate and Speaker , <i>WMO Science Pavilion Side Event</i> , ' Co-development of tailored climate services for multiple socio-economic sectors and stakeholders in Sub-Saharan Africa ', <i>COP27, Sharm-el-Sheik</i>	2022
Advisory Board Member – CONFER Project , <i>EU Horizon 2020</i>	2020-
Advisory Board Member – FOCUS-Africa Project , <i>EU Horizon 2020</i>	2020-
Associate Editor - Water and Critical Zone Section , <i>Frontiers in Water</i>	2019-
David A. Siegel ERI Director's Award , Earth Research Institute <i>This \$5000 award recognizes scientific leadership within the ERI research community and is particularly focused on recognizing a PI's ability to establish interdisciplinary scientific relationships.</i>	2018
Certified Professional Hydrologist - Surface Water , American Institute of Hydrology , Cert#: 18-H-9002	2017-
NSF Hydrologic Sciences Review Panel Member <i>National Science Foundation, Washington, DC</i>	2017
Ignacio Rodriguez-Iturbe Publication Award , <i>Best Publication in Ecohydrology for 2016</i> <i>John Wiley & Sons</i>	2017
Invited Expert Peer Reviewer , <i>Proposed Rule for Mercury Water Quality Objectives and Implementation</i> <i>Environmental Protection Agency (California)</i>	2016
Invited Keynote Speaker , ' Reclaiming the Sierra 2015: The New Gold Rush ' <i>The Sierra Fund</i>	2015
Invited Speaker , ' Rhône-Sacramento River Management Workshop ' <i>ISRivers Conference</i>	2014
Consulting Scientist , ' Central Valley Flood Protection Plan 2017 ' <i>California Department of Water Resources</i>	2014

Invited Expert Testimony, ‘Public health and environmental impacts caused by abandoned mines and mercury’, <i>California State Assembly Natural Resources Committee, Sacramento, CA, USA</i>	2014
Peer Review College Member, <i>Natural Environment Research Council</i>	2010-2013
Invited Keynote Speaker, ‘4th International Seminar on Small Catchments Dynamics’, <i>International Association of Geomorphologists, Israel</i>	2010
Expert Panelist on Floodplain Restoration, <i>Floodplain Management Association Annual Conference,</i> <i>San Jose, CA, USA</i>	2009
Expert Instructor, <i>Course on Sediment Transport: Measurement, Modelling, and Management,</i> <i>Forestry and Technology Center of Catalonia, Spain</i>	2009
Invited Delegate, ‘An International Workshop Defining Hydromorphological Condition and Links to Ecology’, <i>The Macaulay Institute and Aberdeen University, UK</i>	2009
<u>Expert Panelist on Central Valley Flood Hazards,</u> <i>American Association of Geographers Annual Meeting</i>	2007
Guest Editor, <i>San Francisco Estuary and Watershed Science (Online Journal)</i>	2005
Technical Advisory Committee Member, <i>Sacramento River Partners,</i> Chico, CA.	2004-2005
UC Santa Barbara Dissertation Fellowship, <i>Graduate Division, UC Santa Barbara</i>	2001
Space Grant Graduate Fellowship, <i>UC Santa Barbara Cal Space Institute Center of Excellence</i>	2001
Grant for Young Geomorphologists, <i>International Association of Geomorphologists</i>	2001
Science and Engineering Research Grant, <i>Graduate Division, UC Santa Barbara</i>	2000
Scientific Review Panel Member, <i>CALFED Bay-Delta Restoration Program,</i> Sacramento, CA	1999
Dozier Fellowship, <i>Donald Bren School of Environmental Science & Management</i>	1999

GRADUATE STUDENT AND POSTDOC ADVISING/SUPERVISION

<https://singer.eri.ucsb.edu/people/>

George Blake, PhD (Committee Member), <i>GW4 NERC Doctoral Training Programme,</i> <i>Geographical Sciences, UoB</i> Thesis: Modelling climate change and impacts in the Horn of Africa Drylands (<i>In Progress</i>)	2022-
Katherine Cocking, PhD (Primary), <i>CU College-Funded, Earth & Environmental Sciences, CU</i> Thesis: Climate change projections and impacts in the Horn of Africa Drylands (<i>In Progress</i>)	2021-
Pierre Lochin, PhD (Committee Member), <i>H2O Lyon École Universitaire de recherche des Sciences de l'eau</i> <i>ENS, Lyon</i> Thesis: Controls on riparian forest water availability and corresponding vegetation responses (<i>In Progress</i>)	2021-2024
Saskia Salwey, PhD (Committee Member), <i>GW4 NERC Doctoral Training Programme,</i> <i>Geographical Sciences, UoB</i> Thesis: Influence of reservoirs and their operational rules on streamflow regimes (<i>In Progress</i>)	2020-2024
Dagmawi Teklu Asfaw, Postdoc, <i>Royal Society and EU Funded, UoB</i>	2019-2025
Jared Williams, PhD (Committee Member), <i>NSF Geography Funded, SUNY-ESF</i> Thesis: Water use and plant growth in a multiple-use basin (<i>In Progress</i>)	2018-2021
Eferhonore Efe-Eyefia, PhD (Committee Member), <i>Nigerian government Funded, School of Mathematics,</i> <i>Cardiff</i> Thesis: Simulating spatio-temporal components of rainfall (<i>Completed</i>)	2019-2023

Conor McMahon, PhD (Committee Member) , <i>SERDP (DoD) Funded, Dept Geography, UCSB</i> Thesis: Fractional pixel signature of riparian forest stress in response to water availability (In Progress)	2019-
Bryn Morgan, PhD (Committee Member) , <i>NSF and ERDP (DoD) Funded, Dept Geog, UCSB</i> Thesis: Modeling and measuring climate-controlled water availability in riparian forests (In Progress)	2018-2024
Melissa Rohde, PhD (Committee Member) , <i>NSF Geography Funded, SUNY-ESF</i> Thesis: Development of ecological forest health indices in groundwater dependent ecosystems (Completed)	2018-2023
Jared Williams, MS (Committee Member) , <i>NSF Geography Funded, SUNY-ESF</i> Thesis: Water use and plant growth in a multiple-use basin (Completed)	2018-2021
Isamar Cortes, Postdoc , <i>EU Horizon 2020 Funded, CU</i>	2024-2025
Manuel Rios Gaona, Postdoc , <i>EU Horizon 2020 Funded, CU</i>	2021-2025
Andrés Quichimbo, Postdoc , <i>EU Horizon 2020 Funded, CU</i>	2020-2025
Dave MacLeod, Postdoc , <i>EU Horizon 2020 Funded, UoB</i>	2020-2022
Kudzai Farai Keseke, Postdoc , <i>SERDP (DoD) Funded, UCSB</i>	2018-2021
Li Kui, Postdoc , <i>NSF and The Nature Conservancy Funded, UCSB</i>	2018-2022
Lissa Pelletier, MS (Committee Member) , <i>SERDP (DoD) Funded, SUNY-ESF</i> Thesis: Plant growth and ecosystem health metrics in drought-prone ecosystems (Completed)	2018-2022
Romy Sabathier, PhD (Primary) , <i>SERDP (DoD) Funded, Earth & Environmental Sciences, CU</i> Thesis: Development and assessment of indicators of forest health in response to climate change (Completed)	2018-2023
Maria Warter, PhD (Primary) , <i>SERDP (DoD) Funded, Earth & Environmental Sciences, CU</i> Thesis: Quantifying water availability to plants under climate change (Completed)	2018-2023
Isaac Kipkemoi, PhD (Committee Member) , <i>Kenyan Government Scholarship, Geographical Sciences, UoB</i> Thesis: Detecting signatures of drought in vegetation of East Africa (Completed)	2018-2023
Chris Kibler, PhD (Committee Member) , <i>NSF Geography Funded, Department of Geography, UCSB</i> Thesis: Remote sensing of forest health in response to water stress (Completed)	2017-2023
Shiuan-An Chen, PhD (Committee Member) , <i>School of Geographical Sciences, UoB</i> Thesis: Climatic controls on river topography (Completed)	2016-2020
Nooshin Mehrnegar, PhD (Committee Member) , <i>University Funded, Earth & Environmental Sciences, CU</i> Thesis: Modelling of global hydrologic fluxes via remote sensing and data assimilation (Completed)	2017-2021
Andrés Quichimbo, PhD (Committee Member) , <i>University Funded, Earth & Environmental Sciences, CU</i> Thesis: Groundwater modelling of climatic controls on recharge (Completed)	2017-2021
Thomas Mykty, MS (Committee Member) , <i>Dept. Geology, San Jose State University</i> Thesis: History of deep mercury storage in Yolo Bypass (Completed)	2016-2020
Marc Mayes, Postdoc , <i>SERDP (DoD) Funded, UCSB</i>	2018-2020
Rory Hollings, MRes (Committee Member) , <i>NERC Studentship, School of Geographical Sciences, UoB</i> Thesis: How do rainstorms shape dryland river basins? (Completed)	2014-2017
Tyler Nakamura, MS (Committee Member) , <i>Dept. Geology, San Jose State University</i> Thesis: Deep storage of hydraulic mining sediment along the Lower Yuba River, CA (Completed)	2015-2017
Cristina Evans, PhD (Primary) , <i>NERC Studentship, Dept. EES, University of St Andrews</i> Thesis: Modeling climate, topography, and substrate controls on water partitioning in river floodplains (Completed)	2013-2017
Christopher Sargeant, PhD (Primary) , <i>NERC Studentship, Dept. of EES, University of St Andrews</i> Thesis: The ecohydrologic signature of drought in river corridors (Completed)	2012-2017

Louise Slater, PhD (Primary) , <i>NERC Studentship, Dept. EES, University of St Andrews</i> Thesis: Trends in alluvial channel geometry and streamflow: an investigation of patterns and controls (Completed)	2010-2014
John Higson, MPhil (Primary) , <i>Dept. EES, University of St Andrews</i> Thesis: The impact of the streamflow hydrograph on sediment supply from terrace erosion (Completed)	2009-2014
Nina Kilham (Committee Member), PhD , <i>Department of Geography, UCSB</i> Thesis: Floodplain Sedimentation on the Feather River, California: Combined Use of Remote Sensing and Numerical Modeling to Analyze Contemporary Deposition Patterns in a Historically Mined Basin (Completed)	2005-2009
Michael Springborn (Primary), PhD , <i>Bren School, UCSB</i> Project: Sediment-adsorbed total mercury flux through Yolo Bypass, the primary floodway and wetland in the Sacramento Valley, California (Completed)	2006

EXTERNAL ACADEMIC SERVICE

External Examiner , <i>MSc : Water and Environmental Management, University of Bristol</i>	2022-
Session Convener , 'Building operational weather and climate services for sustainable development in the global South', CL2.17, <i>European Geosciences Union Annual Meeting</i> , Virtual, P. Roudier, R. Boscolo, P.D. Kangah, E. Kolstad, <u>M. Singer</u>	2021
Cardiff University Pod Member , <i>Unlearning Racism in Geoscience (URGE)</i>	2021-2022
Board Member, Water Security Alliance , <i>Great Western 4 (GW4) Universities of Southwest UK</i>	2019-2021
Session Convener , 'Indicators of plant water availability and stress in drought-prone forests at a range of spatial and temporal scales', H076 <i>American Geophysical Union Fall Meeting</i> , Washington, DC, <u>M. Singer</u> , K. Caylor, D. Roberts, J. Stella	2018
External Examiner for Ph.D. , <i>Universitat de Barcelona</i>	2018
NSF Hydrologic Sciences Review Panel Member , <i>National Science Foundation, Washington, DC</i>	2017
External Examiner for Ph.D. , <i>École Normale Supérieure de Lyon, University of Lyon</i>	2015
Session Convener , 'Water quality & toxicity', <i>ISRivers Conference</i> , Lyon, France	2015
External Examiner for Ph.D. , <i>Department of Geography, University of Exeter</i>	2013
External Examiner for Masters Thesis , <i>Department of Geography, Simon Fraser University</i>	2011
Scientific Committee Member , ' 4th International Seminar on Small Catchments Dynamics ', <i>International Association of Geomorphologists, Israel</i>	2010
NERC Peer Review College Member , <i>Natural Environment Research Council (NERC), UK</i>	2010-2013
Workshop co-Organizer , 'Applied Sediment Dynamics-Scaling Issues' <i>Telford-SAGES Workshop</i> , University of Glasgow, T. Hoey, <u>M. Singer</u> , M. Attal	2010
Session Convener , 'Sediment supply, storage, and delivery as controlled by hillslope-channel coupling', EP51B, EP53E, EP54A <i>American Geophysical Union Fall Meeting</i> , San Francisco, <u>M. Singer</u> , S. Mudd, E. Gabet	2009
Session Co-Convener , 'The influence of dams on sediment regimes and implications for management', <i>European Geosciences Union Annual Meeting</i> , HS11.4, Vienna, R.J. Batalla, <u>M. Singer</u> , D. Vericat	2009
British Society for Geomorphology Campus Representative , <i>University of St Andrews</i>	2008-2012
Field Trip Co-Leader , ' <i>Tracking Hydraulic Mining Sediment in the Sierra Foothills and Sacramento Valley</i> ', American Association of Geographers Annual Meeting Field Trip	2007

Geomorphology Session Convener, *Sacramento River Restoration Science Conference*, Chico, CA 2007

Ph.D. Committee Member/Examiner, *University of California Santa Barbara*. 2005-2009

Ph.D. Student Project Co-Advisor, Michael Springborn, *University of California Santa Barbara*. 2004

- Co-advised on secondary research project.

Peer Reviewer

2003-

Relevant Journals and Organizations

American Geophysical Union Books, American Geophysical Union Monographs, Basin Research, Bay-Delta Ecosystem Restoration Program, CALFED Ecosystem Restoration Program, Carnegie Trust for Scottish Universities, Earth Surface Processes and Landforms, Earth's Future, Ecological Applications, Ecological Engineering, Environmental Management, Environmental Modelling and Software, Environmental Pollution, Environmental Research Letters, Fondazione Cassa di Risparmio di Padova e Rovigo (Italy), Forest Ecology and Management, French National Research Agency (ANR), Geografiska Annaler-Physical Geography, Geological Magazine, Geological Society of America Bulletin, Geology, Geomorphology, Geophysical Research Letters, GeoResJ, Hydrological Processes, Hydrology and Earth System Sciences (HESS), International Association of Hydrological Sciences (IAHS) Red Books, International Journal of Climatology, International Journal of Sediment Research, Journal of the American Water Resources Association, Journal of Environmental Management, Journal of Geophysical Research-Earth Surface, Journal of Hydro-environment Research, Journal of Hydrology, Journal of Hydrology-Regional Studies, Journal of Radioanalytical and Nuclear Chemistry, Journal of River Basin Management, Journal of Soils and Sediments, Journal of Water Resources Management, Land Degradation and Development, Limnologica, National Science Foundation (USA) - CAREER Program, National Science Foundation - Environmental Engineering and Sustainability Program (CBET), National Science Foundation - Frontier Research in Earth Sciences (FRES), National Science Foundation - Geomorphology & Landuse Dynamics Program (EAR), National Science Foundation - Geography & Spatial Sciences Program (BCS), National Science Foundation - Paleo Perspectives on Climate Change Program (P2C2), National Science Foundation – Hydrologic Sciences Program (EAR), Natural Environment Research Council (UK-NERC), Natural Sciences and Engineering Research Council of Canada (NSERC), Nature Communications, Nature Geoscience, Netherlands Organisation for Scientific Research, One Earth, Physical Geography, PLOS One, Reviews in Geophysics, Sacramento Municipal Utilities District, Sacramento River Partners, San Francisco Estuary and Watershed Science, Sea Grant, Sedimentology, Southeastern Geography, Swiss National Science Foundation, The Nature Conservancy, The Royal Society (UK), The Science of the Total Environment, Trees – Structure and Function, Trinity River Restoration Program, US Geological Survey, Water Resources Management, Water Resources Research

UNIVERSITY ADMINISTRATION

FLF Panel Member, *College of Physical Sciences and Engineering* 2024

NERC Internal Review Panel Member, *EARTH, Cardiff* 2022

Lectureship Shortlist/Interview Panel Member, *EARTH, Cardiff* 2022

Lectureship Interview Panel Member, *EARTH, Cardiff* 2022

School Executive Committee Member, *EARTH, Cardiff* 2021-2024

School Research Executive Committee Member, *EARTH, Cardiff* 2021-

Head, Centre for Resilience and Environmental Change, *Cardiff* 2021-

Deputy Director, Water Research Institute, *Cardiff* 2019-

Board Member, Water Research Institute, *Cardiff* 2017-

MSc Programme Director, Water in a Changing World, *Cardiff* 2017-

'Hydrological Cycle' EA2219 Module Coordinator (~50 undergrad students), *Cardiff* 2017-2019

'Water in the Environment' EAT109 Module Coordinator (~30 MSc students), *Cardiff* 2017-

Internal PhD Thesis Examiner, *Cardiff* 2017

Merit Review Committee Chair, *ERI, UCSB* 2017

Merit Review Committee Chair, *ERI, UCSB* 2016

Honours (upper division) Advisor of Studies (~65 students), *EES, USLA* 2015-2017

'Water in the Environment' Course Coordinator, *EES, USLA* 2016-2017

Director of Postgraduate Studies (Graduate School), *EES, USLA* 2012-2017

IAPETUS Doctoral Training Programme Director for St Andrews, *EES, USLA* 2013-2017

Internal PhD Thesis Examiner, *EES, USLA* 2015

Merit Review Committee Chair, *ERI, UCSB* 2015

Merit Review Committee Chair, *ERI, UCSB* 2014

Merit Review Committee Chair, ERI, UCSB	2012
Academic Interview Panel Member, GG, USLA	2012
Postgraduate (Graduate School) Convenor, GG, USLA	2012
Library Representative, GG, USLA	2010-2012
Honours Physical Geography Field Course Coordinator, GG, USLA	2009-2011
Postgraduate Committee Member, GG, USLA	2009-2012
Honours Science Dissertation Module Coordinator, GG, USLA	2009-2012
1st and 2nd Year Undergraduate Science Advisor, GG, USLA	2008-2012
Merit Review Committee Chair, ICESS, UCSB	2009
Merit Review Committee Member, ICESS, UCSB	2007
Deans Advisory Committee Representative, Donald Bren School of ES&M.	1999-2000

VOLUNTEER SERVICE

Committee Member, Clifton College Equality, Diversity, Inclusion, Belonging Committee, Bristol UK	2021-2022
Pod Member, Unlearning Racism in the Geosciences, EARTH, Cardiff UK	2021
Sound Producer, KALX College Radio Station, Berkeley, California	2004-2007
Tutor/Mentor, Lafayette School Mentoring Project, Oakland, California.	2000-2002
Soil Conservationist, U.S. Peace Corps & Ministry of Forests and Soil Conservation, Nepal.	1994-1996
Laboratory Assistant, Berkeley Geochronology Laboratory, Berkeley, California.	1994
Wildlife Care Assistant, PAWS Olympic Wildlife Center, Olympia, Washington.	1992
Assistant Zookeeper, Audobon Zoological Gardens, New Orleans, Louisiana.	1990-1991
Tutor, Tulane University Community Action Prison Project, New Orleans, Louisiana.	1990

OTHER SKILLS AND QUALIFICATIONS

Certified Mediator <i>London School of Mediation, International Mediation Institute</i>	2022
Certified Professional Hydrologist-Surface Water, Cert#: 18-H-9002 <i>American Institute of Hydrology</i>	2017
Participant in 'Teaching Geomorphology in the 21st Century' Workshop, <i>United States National Science Foundation</i>	2008
Fluency in Spanish and Nepali languages. Technical Software and Languages: MATLAB, HEC-RAS, HEC-HMS, FLUVIAL-12, ArcGIS, UNIX, Adobe Creative Suite, ProTools.	

PROFESSIONAL MEMBERSHIPS

American Geophysical Union
 American Institute of Hydrology
 American Association of Geographers
 International Association of Hydrological Sciences
 British Society for Geomorphology
 British Hydrological Society