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Earth Research Institute (ERI)
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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)

PEER REVIEWED PUBLICATIONS

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

Advisee student and postdoc work denoted by *. Journal is listed for invited revision.

90. Kibler, C.L., Hall, L.S., Lambert, A.M., Searcy, A.J., Kisner, D., McMahon, C.A., Kui, L., Rohde, M.M., Roberts, D.A., Stella, J.C., **Singer, M.B.** (In Review); Remnant and restored woodlands serve as refugia for sensitive riparian bird species during extreme drought — In Review

89. *Quichimbo, E.A., **Singer, M.B.**, Michaelides, K., R., Cuthbert, M.O. (In Review); DRYP 2.0: A regional model for simulating the water balance across an aridity gradient — In Review

87. *Kipkemoi, I., Michaelides, K., Rosolem, R., **Singer, M.B.** (In Revision); Climatic expression of rainfall on soil moisture dynamics in drylands — In Revision

86. *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

86. **Singer, M.B.**, Stella, J.C., Roberts, D.A., Caylor, K. (In Press), Examining Dynamic Ecohydrology in Dryland Riparian Forests, ed. B. Wilcox, Taylor & Francis, Invited Book Chapter — 2026

85. *Blake G., Michaelides K., Kendon E., Cuthbert M., **Singer M.B.** (2025) The impact of convection-permitting model rainfall on the dryland water balance, ***Hydrology and Earth System Science (HESS***), 29(23):7093–125, doi:10.5194/hess-29-7093-2025. pdf — 2025

84. *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 drought, ***Ecohydrology***, 18(5):e70060, doi:10.1002/eco.70060, pdf — 2025

83. Daron, J., Michaelides, K., Hassaballah, K., Quichimbo, A., Parfitt, R., Stacey, J., Steynor, A., Johnson, C., MacLeod, D., **Singer, M.B.** (2025); Co-produced impact-based seasonal outlooks, ***Climate Services***, 38:100579, doi:10.1016/j.cliser.2025.100579, pdf. — 2025

82. *Rigby, J.M., Luta, A., Preist, C., Wasonga, O., **Singer, M.B.**, Michaelides, K. (2025); Mobile Phones in the Drylands: How Technology Supports Information Sharing in Rural Kenya, ***ACM Computing and Sustainable Societies 2025 (COMPASS 2025)***, pp.167-183, doi: 10.1145/3715335.373546, pdf. — 2025

81. Gebrechorkos, S., Sheffield, J., Vicente-Serrano, S.M., Funk, C., Miralles, D.G., Peng, J., Dyer, E., Talib, J., Beck, H., **Singer, M.B.**, Dadson, S. (2025); Warming accelerates global drought severity, ***Nature***, 642:628–635, doi:10.1038/s41586-025-09047-2, pdf. — 2025

80. Grieve, S.W.D., **Singer, M.B.**, *Chen, S-A., Michaelides, K. (2025), GDBM: A database of global drainage basin morphology, ***PLOS ONE***, 20(4):e0320771, doi:10:1371/journal.pone.0320771, pdf. — 2025

79. Odongo, R., Schrieks, T., Streefkerk, I., de Moel, H., Busker, T., Haer, T., MacLeod, D.A., Michaelides, K., **Singer, M.B.**, Assen, M., Otieno, G., Van Loon, A.F. (2025); Drought impacts and community adaptation: perspectives on the 2020-2023 drought in East Africa, ***International Journal of Disaster Risk Reduction***, 119:105309, doi:10.1016/j.ijdrr.2025.105309, pdf. — 2025

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. pdf. 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., Puijalon, 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

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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

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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***, 15(12): 5449–5466, doi:10.5194/essd-15-5449-2023. pdf 2023

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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

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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., Jagdhuberd, 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., Hobley, 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 AGUniverse 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
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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
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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

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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 resideño y la evaluación de crecidas de mantenimiento en el bajo Ebro, in Ubeda, X., Vericat, D., Batalla, R.J. (eds.), *Avances de la Geomorfologia 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)

HYDROAWARE-AFRICA.

EU Marie Skłodowska-Curie Actions (MSCA) Global Fellowship

• Funded: €430,343; A. Quichimbo, M. Singer (host supervisor), K. Caylor, C. Funk 2025

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 $\delta^{18}O$ and $\delta^{13}C$.
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/Milieux, 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/Milieux, 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/Milieux, 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/Milieux, 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, IAG, 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, The Guardian, Associated Press, Financial Times, Huffington Post, Der Spiegel, Newsweek, Southern California Public Radio*** (special in-depth story), ***CBS Television News-Sacramento*** (special in-depth TV story), ***BBC Radio 4-Today*** (live interview), ***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 climate hazards in Pakistan, *WaterAid* 2025

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, *The World Bank* (Declined) 2024

Consulting Hydrologist, Recent Flood and Drought Impacts in WaterAid countries, *WaterAid* 2023

Guest Editor, *Frontiers in Climate (Special issue on Climate Services for Africa)* 2023

Consulting Hydrologist, Trends in Drought and Exposure Across Africa, *WaterAid* 2022

Invited Delegate and Speaker, *European Union Pavilion Side Event,* 'Climate services for adaptation in Sub-Saharan Africa', *COP27, Sharm-el-Sheik,* 2022

Invited Delegate and Speaker, *WMO Science Pavilion Side Event,* 'Co-development of tailored climate services for multiple socio-economic sectors and stakeholders in Sub-Saharan Africa', *COP27, Sharm-el-Sheik* 2022

Advisory Board Member – CONFER Project, *EU Horizon 2020* 2020-

Advisory Board Member – FOCUS-Africa Project, *EU Horizon 2020* 2020-

Associate Editor - Water and Critical Zone Section, *Frontiers in Water* 2019-

David A. Siegel ERI Director's Award, ***Earth Research Institute***

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. 2018

Certified Professional Hydrologist - Surface Water, *American Institute of Hydrology, Cert#: 18-H-9002* 2017-

NSF Hydrologic Sciences Review Panel Member
National Science Foundation, Washington, DC 2017

Ignacio Rodriguez-Iturbe Publication Award, ***Best Publication in Ecohydrology for 2016***
John Wiley & Sons 2017

Invited Expert Peer Reviewer, ***Proposed Rule for Mercury Water Quality Objectives and Implementation***
Environmental Protection Agency (California) 2016

Invited Keynote Speaker, '*Reclaiming the Sierra 2015: The New Gold Rush'.*
The Sierra Fund 2015

Invited Speaker, '*Rhône-Sacramento River Management Workshop'*
ISRivers Conference 2014

Consulting Scientist, '*Central Valley Flood Protection Plan 2017'*,
California Department of Water Resources 2014

Invited Expert Testimony, '*Public health and environmental impacts caused by abandoned mines and mercury'*,
California State Assembly Natural Resources Committee, Sacramento, CA, USA 2014

Peer Review College Member, *Natural Environment Research Council* 2010-2013

Invited Keynote Speaker, '*4th International Seminar on Small Catchments Dynamics'*,
International Association of Geomorphologists, Israel 2010

Expert Panelist on Floodplain Restoration, *Floodplain Management Association Annual Conference, San Jose, CA, USA* 2009

Expert Instructor, *Course on Sediment Transport: Measurement, Modelling, and Management*,
Forestry and Technology Center of Catalonia, Spain 2009

Invited Delegate, *'An International Workshop Defining Hydromorphological Condition and Links to Ecology'*, *The Macaulay Institute and Aberdeen University, UK* 2009

Expert Panelist on Central Valley Flood Hazards, *American Association of Geographers Annual Meeting* 2007

Guest Editor, *San Francisco Estuary and Watershed Science (Online Journal)* 2005

Technical Advisory Committee Member, *Sacramento River Partners,* Chico, CA. 2004-2005

UC Santa Barbara Dissertation Fellowship, *Graduate Division, UC Santa Barbara* 2001

Space Grant Graduate Fellowship, *UC Santa Barbara Cal Space Institute Center of Excellence* 2001

Grant for Young Geomorphologists, *International Association of Geomorphologists* 2001

Science and Engineering Research Grant, *Graduate Division, UC Santa Barbara* 2000

Scientific Review Panel Member, *CALFED Bay-Delta Restoration Program*, Sacramento, CA 1999

Dozier Fellowship, *Donald Bren School of Environmental Science & Management* 1999

GRADUATE STUDENT AND POSTDOC ADVISING/SUPERVISION

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

George Blake, PhD (Committee Member), *GW4 NERC Doctoral Training Programme, Geographical Sciences, UoB* 2022-
Thesis: Modelling climate change and impacts in the Horn of Africa Drylands ***(In Progress)***

Katherine Cocking, PhD (Primary), *CU College-Funded, Earth & Environmental Sciences, CU* 2021-2026
Thesis: Climate change projections and impacts in the Horn of Africa Drylands ***(In Progress)***

Pierre Lochin, PhD (Committee Member), *H2O'Lyon École Universitaire de recherche des Sciences de l'eau ENS, Lyon* 2021-2024
Thesis: Controls on riparian forest water availability and corresponding vegetation responses ***(In Progress)***

Saskia Salwey, PhD (Committee Member), *GW4 NERC Doctoral Training Programme, Geographical Sciences, UoB* 2020-2024
Thesis: Influence of reservoirs and their operational rules on streamflow regimes ***(In Progress)***

Dagmawi Teklu Asfaw, Postdoc, *Royal Society and EU Funded, UoB* 2019-2025

Jared Williams, PhD (Committee Member), NSF Geography Funded, SUNY-ESF 2018-2021
Thesis: Water use and plant growth in a multiple-use basin ***(In Progress)***

Eferhonore Efe-Eyefia, PhD (Committee Member), *Nigerian government Funded, School of Mathematics, Cardiff* 2019-2023
Thesis: Simulating spatio-temporal components of rainfall ***(Completed)***

Conor McMahon, PhD (Committee Member), *SERDP (DoD) Funded, Dept Geography, UCSB* 2019-2026
Thesis: Fractional pixel signature of riparian forest stress in response to water availability ***(In Progress)***

Bryn Morgan, PhD (Committee Member), *NSF and ERDP (DoD) Funded, Dept Geog, UCSB* 2018-2024
Thesis: Modeling and measuring climate-controlled water availability in riparian forests ***(In Progress)***

Melissa Rohde, PhD (Committee Member), *NSF Geography Funded, SUNY-ESF* 2018-2023
Thesis: Development of ecological forest health indices in groundwater dependent ecosystems ***(Completed)***

Jared Williams, MS (Committee Member), *NSF Geography Funded, SUNY-ESF* 2018-2021
Thesis: Water use and plant growth in a multiple-use basin ***(Completed)***

Isamar Cortes, Postdoc, *EU Horizon 2020 Funded, CU* 2024-2025

Manuel Rios Gaona, Postdoc, *EU Horizon 2020 Funded, CU* 2021-2025

Andrés Quichimbo, Postdoc, *EU Horizon 2020 Funded, CU* 2020-2025

Dave MacLeod, Postdoc, *EU Horizon 2020 Funded, UoB* 2020-2022

Kudzai Farai Keseke, Postdoc, *SERDP (DoD) Funded, UCSB* 2018-2021

Li Kui, Postdoc, *NSF and The Nature Conservancy Funded, UCSB* 2018-2022

Lissa Pelletier, MS (Committee Member), *SERDP (DoD) Funded, SUNY-ESF* 2018-2022
Thesis: Plant growth and ecosystem health metrics in drought-prone ecosystems ***(Completed)***

Romy Sabathier, PhD (Primary), *SERDP (DoD) Funded, Earth & Environmental Sciences, CU* 2018-2023
Thesis: Development and assessment of indicators of forest health in response to climate change ***(Completed)***

Maria Warter, PhD (Primary), *SERDP (DoD) Funded, Earth & Environmental Sciences, CU* 2018-2023
Thesis: Quantifying water availability to plants under climate change ***(Completed)***

Isaac Kipkemoi, PhD (Committee Member), *Kenyan Government Scholarship, Geographical Sciences, UoB* 2018-2023
Thesis: Detecting signatures of drought in vegetation of East Africa ***(Completed)***

Chris Kibler, PhD (Committee Member), *NSF Geography Funded, Department of Geography, UCSB* 2017-2023
Thesis: Remote sensing of forest health in response to water stress ***(Completed)***

Shiuan-An Chen, PhD (Committee Member), *School of Geographical Sciences, UoB* 2016-2020

Thesis: Climatic controls on river topography *(**Completed**)*

Nooshin Mehrnegar, PhD (Committee Member), *University Funded, Earth & Environmental Sciences, CU* 2017-2021
Thesis: Modelling of global hydrologic fluxes via remote sensing and data assimilation *(**Completed**)*

Andrés Quichimbo, PhD (Committee Member), *University Funded, Earth & Environmental Sciences, CU* 2017-2021
Thesis: Groundwater modelling of climatic controls on recharge *(**Completed**)*

Thomas Myktyn, MS (Committee Member), *Dept. Geology, San Jose State University* 2016-2020
Thesis: History of deep mercury storage in Yolo Bypass *(**Completed**)*

Marc Mayes, Postdoc, *SERDP (DoD) Funded, UCSB* 2018-2020

Rory Hollings, MRes (Committee Member), *NERC Studentship, School of Geographical Sciences, UoB* 2014-2017
Thesis: How do rainstorms shape dryland river basins? *(**Completed**)*

Tyler Nakamura, MS (Committee Member), *Dept. Geology, San Jose State University* 2015-2017
Thesis: Deep storage of hydraulic mining sediment along the Lower Yuba River, CA *(**Completed**)*

Cristina Evans, PhD (Primary), *NERC Studentship, Dept. EES, University of St Andrews* 2013-2017
Thesis: Modeling climate, topography, and substrate controls on water partitioning in river floodplains *(**Completed**)*

Christopher Sargeant, PhD (Primary), *NERC Studentship, Dept. of EES, University of St Andrews* 2012-2017
Thesis: The ecohydrologic signature of drought in river corridors *(**Completed**)*

Louise Slater, PhD (Primary), *NERC Studentship, Dept. EES, University of St Andrews* 2010-2014
Thesis: Trends in alluvial channel geometry and streamflow: an investigation of patterns and controls *(**Completed**)*

John Higson, MPhil (Primary), *Dept. EES, University of St Andrews* 2009-2014
Thesis: The impact of the streamflow hydrograph on sediment supply from terrace erosion *(**Completed**)*

Nina Kilham (Committee Member), PhD, *Department of Geography, UCSB* 2005-2009
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**)*

Michael Springborn (Primary), PhD, *Bren School, UCSB* 2006
Project: Sediment-adsorbed total mercury flux through Yolo Bypass, the primary floodway and wetland in the Sacramento Valley, California *(**Completed**)*

EXTERNAL ACADEMIC SERVICE

External Examiner, *MSc : Water and Environmental Management, University of Bristol* 2022-

Session Convener, 'Building operational weather and climate services for sustainable development in the global South', CL2.17, *European Geosciences Union Annual Meeting*, Virtual, P. Roudier, R. Boscolo, P.D. Kangah, E. Kolstad, M. Singer 2021

Cardiff University Pod Member, *Unlearning Racism in Geoscience (URGE)* 2021-2022

Board Member, Water Security Alliance, *Great Western 4 (GW4) Universities of Southwest UK* 2019-2021

Session Convener, 'Indicators of plant water availability and stress in drought-prone forests at a range of spatial and temporal scales', H076
American Geophysical Union Fall Meeting, Washington, DC, M. Singer, K. Caylor, D. Roberts, J. Stella 2018

External Examiner for Ph.D., *Universitat de Barcelona* 2018

NSF Hydrologic Sciences Review Panel Member, *National Science Foundation, Washington, DC* 2017

External Examiner for Ph.D., *École Normale Supérieure de Lyon, University of Lyon* 2015

Session Convener, 'Water quality & toxicity', *ISRivers Conference*, Lyon, France 2015

External Examiner for Ph.D., *Department of Geography, University of Exeter* 2013

External Examiner for Masters Thesis, *Department of Geography, Simon Fraser University* 2011

Scientific Committee Member, '*4th International Seminar on Small Catchments Dynamics*',
International Association of Geomorphologists, Israel 2010

NERC Peer Review College Member, *Natural Environment Research Council (NERC), UK* 2010-2013

Workshop co-Organizer, 'Applied Sediment Dynamics-Scaling Issues'
Telford-SAGES Workshop, University of Glasgow, T. Hoey, M. Singer, M. Attal 2010

Session Convener, 'Sediment supply, storage, and delivery as controlled by hillslope-channel coupling', EP51B, EP53E, EP54A
American Geophysical Union Fall Meeting, San Francisco, M. Singer, S. Mudd, E. Gabet 2009

Session Co-Convener, 'The influence of dams on sediment regimes and implications for management', *European Geosciences Union Annual Meeting*, HS11.4, Vienna, R.J. Batalla, M. Singer, D. Vericat 2009

British Society for Geomorphology Campus Representative, *University of St Andrews* 2008-2012

Field Trip Co-Leader, *'Tracking Hydraulic Mining Sediment in the Sierra Foothills and Sacramento Valley',*
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, UStA* 2015-2017
'Water in the Environment' Course Coordinator, *EES, UStA* 2016-2017
Director of Postgraduate Studies (Graduate School), *EES, UStA* 2012-2017
IAPETUS Doctoral Training Programme Director for St Andrews, *EES, UStA* 2013-2017
Internal PhD Thesis Examiner*, EES, UStA* 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, UStA* 2012
Postgraduate (Graduate School) Convenor, *GG, UStA* 2012
Library Representative, *GG, UStA* 2010-2012
Honours Physical Geography Field Course Coordinator, *GG, UStA* 2009-2011
Postgraduate Committee Member, *GG, UStA* 2009-2012
Honours Science Dissertation Module Coordinator, *GG, UStA* 2009-2012
1st and 2nd Year Undergraduate Science Advisor, *GG, UStA* 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
London School of Mediation, International Mediation Institute 2022
Certified Professional Hydrologist-Surface Water, Cert#: 18-H-9002
American Institute of Hydrology 2017
Participant in 'Teaching Geomorphology in the 21st Century' Workshop,
United States National Science Foundation 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