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Fellow, Cooperative Institute for Research in Environmental Sciences (CIRES)
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EDUCATION

Ph.D., Geosciences, Pennsylvania State University, 1996
A.B., Anthropology, Brown University (cum laude), 1988

ACADEMIC APPOINTMENTS

2017 – present Executive Director, Community Surface Dynamics Modeling System (CSDMS), Boulder, USA
2013 – present Professor, CIRES and Department of Geological Sciences, University of Colorado, Boulder, USA
2010 Visiting Scientist, Institut des Sciences de la Terre, Grenoble, France
2007 – 2013 Associate Professor, CIRES and Department of Geological Sciences, University of Colorado, Boulder, USA
2004 – 2007 Assistant Professor, CIRES and Department of Geological Sciences, University of Colorado, Boulder, USA
2000 – 2003 University Lecturer in Geocomputation, School of Geography and the Environment, Oxford University, UK
2000 – 2003 Tutorial Fellow in Geography, Brasenose College, Oxford, UK
1997 – 2000 Research Associate, Department of Civil and Environmental Engineering, MIT, USA
1996 Postdoctoral Associate, Department of Civil and Environmental Engineering, MIT, USA

HONORS AND AWARDS

Ralph Alger Bagnold Medal, European Geosciences Union, 2012
Boulder Faculty Assembly Teaching Excellence Award, University of Colorado, 2013
Fellow, American Geophysical Union (elected 2017)

MEMBERSHIPS

American Geophysical Union
Geological Society of America
Sigma Xi
Phi Beta Kappa
Community Surface Dynamics Modeling System

PUBLICATIONS

Refereed Journal Articles, Book Chapters, and Proceedings

(*Denotes graduate student author; ** post-doctoral author; *** undergraduate author)

139. Shmilovitz*, Y., **Tucker, G.**, Rossi, M., Morin, E., Armon, M., Pederson, J., Campforts, B., Haviv, I., and Enzel, Y. (in press) Impacts of rainstorm intensity and temporal pattern on caprock cliff persistence and hillslope morphology in drylands. *Journal of Geophysical Research: Earth Surface*.
138. Shmilovitz*, Y., Marra, F., Enzel, Y., Morin, E., Armon, M., Matmon, A., Mushkin, A., Levi, Y., Khain, P., Rossi, M., **Tucker, G.**, Pederson, J., and Haviv, I. (2023) The impact of extreme rainstorms on escarpment morphology in arid areas: insights from the central Negev Desert. *Journal of Geophysical Research: Earth Surface*, 128, 10, e2023JF007093, <https://doi.org/10.1029/2023JF007093>.
137. Nudurupati*, S.S., Istanbuluoglu, E., **Tucker, G.E.**, Gasparini, N.M., Hobley, D.J., Hutton, E.W.H., Barnhart, K.R., and Adams, J.M. (2023) On transient semi-arid ecosystem dynamics using Landlab: vegetation shifts, topographic refugia, and response to climate. *Water Resources Research*, 59, e2021WR031179, <https://doi.org/10.1029/2021WR031179>.
136. Campforts**, B., Shobe, C.M., Overeem, I., and **Tucker, G.E.** (2022) The art of landslides: how stochastic mass wasting shapes topography and influences landscape dynamics. *Journal of Geophysical Research: Earth Surface*, v. 127(8), e2022JF006745, <https://doi.org/10.1029/2022JF006745>.
135. Hutton, E. W., Piper, M. D., & **Tucker, G.E.** (2022). The Babelizer: language interoperability for model coupling in the geosciences. *Journal of Open Source Software*, 7(71), 3344.
134. Litwin*, D.G., **Tucker, G.E.**, Barnhart, K.R., and Harman, C.J. (2022) Groundwater affects the geomorphic and hydrologic properties of coevolved landscapes. *Journal of Geophysical Research: Earth Surface*, 127, e2021JF006239, <https://doi.org/10.1029/2021JF006239>.
133. Reitman*, N.G., Mueller, K.J., and **Tucker, G.E.** (2022) Surface slip variability on strike-slip faults. *Earth Surface Processes and Landforms*, 47, 4, 1–24, <https://doi.org/10.1002/esp.5294>.
132. **Tucker, G.E.**, Hutton, E.W.H., Piper, M.D., Campforts**, B., Gan** T., Barnhart, K.R., Kettner, A.J., Overeem, I., Peckham, S.D., McCready, L., and Syvitski, J. (2022) CSDMS: A community platform for numerical modeling of Earth-surface processes. *Geoscientific Model Development*, 15, 1413–1439, <https://doi.org/10.5194/gmd-15-1413-2022>.
131. Godard, V., and **Tucker, G.E.** (2021) Influence of climate-forcing frequency on hillslope response. *Geophysical Research Letters*, <https://doi.org/10.1029/2021GL094305>.
130. Barnhart**, K.R., Hutton, E.W.H., **Tucker, G.E.**, Gasparini, N.M., Istanbuluoglu, E., Hobley, D.E.J., Lyons, N.J., Mouchene**, M., Nudurupati*, S.S., Adams*, J.M., and Bandaragoda, C. (2020) Short communication: Landlab 2.0: A software package for Earth surface dynamics. *Earth Surface Dynamics*, 8, 379–397, <https://doi.org/10.5194/esurf-8-379-2020>.
129. Barnhart**, K.R., **Tucker, G.E.**, Doty, S.G., Glade*, R. C., Shobe*, C.M., Rossi**, M., and Hill, M.C. (2020) Projections of landscape evolution on a 10,000 year timescale with assessment and partitioning of uncertainty sources. *Journal of Geophysical Research: Earth Surface*, 125, 7, <https://doi.org/10.1029/2020JF005795>.
128. Barnhart**, K.R., **Tucker, G.E.**, Doty, S.G., Shobe*, C.M., Glade*, R. C., Rossi**, M., and Hill, M.C. (2020) Inverting topography for landscape evolution model process representation: Part 1, conceptualization and sensitivity analysis. *Journal of Geophysical Research: Earth Surface*, 125, 7, <https://doi.org/10.1029/2018JF004961>.
127. Barnhart**, K.R., **Tucker, G.E.**, Doty, S.G., Shobe*, C.M., Glade*, R. C., Rossi**, M., and Hill, M.C. (2020) Inverting topography for landscape evolution model process representation: Part 2, calibration and validation. *Journal of Geophysical Research: Earth Surface*, 125, 7, <https://doi.org/10.1029/2018JF004963>.

126. Barnhart**, K. R., **Tucker, G.E.**, Doty, S.G., Shobe*, C.M., Glade*, R. C., Rossi**, M., and Hill, M.C. (2020) Inverting topography for landscape evolution model process representation: Part 3, Determining parameter ranges for select mature geomorphic transport laws and connecting changes in fluvial erodibility to changes in climate. *Journal of Geophysical Research: Earth Surface*, 125, 7, <https://doi.org/10.1029/2019JF005287>.
125. Calyam, P., Wilkins-Diehr, N., Miller, M., Brookes, E.H., Arora, R., Chourasia, A., Jennewein, D.M., Nandigam, V., LaMar, M.D., Cleveland, S.B., Newman, G., Wang S., Zaslavsky, I., Cianfrocco, M.A., Ellett, K., Tarboton, D., Jeffery, K.G., Zhao Z., González-Aranda, J., Perri, M.J., **Tucker, G.**, Candela, L., Kiss, T., and Gesing, S. (2020) Measuring Success for a Future Vision: Defining Impact in Science Gateways/Virtual Research Environments. *Concurrency and Computation: Practice and Experience*. <https://doi.org/10.1002/cpe.6099>.
124. Carriere*, A., Le Bouteiller, C., **Tucker, G.E.**, Klotz, S., and Naaim, M. (2020) Impact of vegetation on erosion: Insights from the calibration and test of a landscape evolution model in alpine badland catchments. *Earth Surface Processes and Landforms*. <https://doi.org/10.1002/esp.4741>.
123. Duvall, A.R., Harbert*, S.A., Upton, P., **Tucker, G.E.**, Flowers, R.M., and Collett*, C. (2020) River patterns reveal landscape evolution at the edge of subduction, Marlborough Fault System, New Zealand. *Earth Surface Dynamics*, 8, 177-194, <https://doi.org/10.5194/esurf-8-177-2020>.
122. Gray*, H.J., Keen-Ziebert, A., Furbish, D.J., **Tucker, G.E.**, and Mahan, S.A. (2020) Depth-dependent soil mixing persists across climate zones. *Proceedings of the National Academy of Sciences*, <https://doi.org/10.1073/pnas.1914140117>.
121. Hutton, E.W.H., Piper, M.D., and **Tucker, G.E.** (2020) The Basic Model Interface 2.0: A standard interface for coupling numerical models in the geosciences, *Journal of Open Source Software*, 5(51), 2317, <https://doi.org/10.21105/joss.02317>.
120. Litwin*, D.G., **Tucker, G.E.**, Barnhart**, K.R., and Harman, C.J. (2020) GroundwaterDupuitPercolator: A Landlab component for groundwater flow, *Journal of Open Source Software*, 5(46), 1935, <https://doi.org/10.21105/joss.01935>.
119. Rossi**, M., Anderson, R.S., Anderson, S.P., and **Tucker, G.E.** (2020) Orographic controls on sub-daily rainfall statistics and flood frequency in the Colorado Front Range, USA. *Geophysical Research Letters*, 47(4), doi: 10.1029/2019GL085086.
118. Shobe*, C.M., Bennett, G.L., **Tucker, G.E.**, Roback, K., Miller, S.R., and Roering, J.J. (2020) Boulders as a basin-scale lithologic control on river and landscape evolution at the Mendocino triple junction, northern California. *Geological Society of America Bulletin*, <https://doi.org/10.1130/B35385.1>.
117. **Tucker, G. E.**, Hobley, D.E.J., McCoy, S.W., and Struble, W.T. (2020) Modeling the shape and evolution of normal-fault facets. *Journal of Geophysical Research: Earth Surface*, 125, <https://doi.org/10.1029/2019JF005305>.
116. Bandaragoda, C. R., Castronova, A., Istanbuluoglu, E., Strauch, R., Nudurupati, S.S., Phuong, J., Adams, J.M., Gasparini, N.M., Barnhart, K., Hutton, E.W.H., Hobley, D.E.J., Lyons, N.J., **Tucker, G.E.**, Tarboton, D.G., Idaszak, R., and Wang S. (2019) Enabling collaborative numerical modeling in earth sciences using knowledge infrastructure, *Environmental Modelling and Software*, 120, 104424, <https://doi.org/10.1016/j.envsoft.2019.03.020>.
115. Barnhart**, K. R., Glade*, R. C., Shobe*, C.M., and **Tucker, G.E.** (2019) Terrainbento 1.0: a Python package for multi-model analysis in long-term drainage basin evolution, *Geosci. Model Dev.*, 12, 1267-1297, <https://doi.org/10.5194/gmd-12-1267-2019>.
114. Barnhart**, K. R., Hutton, E., and **Tucker, G.E.** (2019) umami: a Python package for Earth surface dynamics objective function construction, *Journal of Open Source Software*, 4(42), 1776, <https://doi.org/10.21105/joss.01776>.
113. Barnhart**, K.R., Rengers, F.K., Ghent***, J.N., **Tucker, G.E.**, Coe, J.A., Kean, J.W., Smith, J.B., Staley, D.M., Kleiber, W., and Wiens, A.M. (2019) Topographic change detection at Chalk Cliffs, Colorado, USA,

using airborne lidar and UAS-based Structure-from-Motion photogrammetry, *7th International Conference on Debris-Flow Hazards Mitigation*, <http://dx.doi.org/10.25676/11124/173233>.

112. Collette*, C.M., Duvall, A.R., Flowers, R.M., **Tucker, G.E.**, and Upton, P. (2019) The timing and style of oblique deformation within New Zealand's Kaikōura Ranges and Marlborough Fault System based on low-temperature thermochronology. *Tectonics*, v. 38, no. 4, p. 1250-1272, <https://doi.org/10.1029/2018TC005268>.
111. Glade*, R. C., Shobe*, C. M., Anderson, R. S., & **Tucker, G. E.** (2019). Canyon shape and erosion dynamics governed by channel-hillslope feedbacks. *Geology*, 47(7), 650-654, <https://doi.org/10.1130/G46219.1>.
110. Gray*, H.J., Jain, M., Sawakuchi, A.O., Mahan, S.A., and **Tucker, G.E.** (2019) Luminescence as a sediment tracer and provenance tool. *Reviews of Geophysics*, <https://doi.org/10.1029/2019RG000646>.
109. Kochanski*, K., Anderson, R.S., and **Tucker, G.E.** (2019) The evolution of snow bedforms in the Colorado Front Range and the processes that shape them. *The Cryosphere*, v. 13, p. 1267–1281, <https://doi.org/10.5194/tc-13-1267-2019>.
108. Reitman*, N.G., Mueller, K.J., **Tucker, G.E.**, Gold, R.D., Briggs, R.D., and Barnhart**, K.R. (2019) Landscape Evolution Models Demonstrate that Offset Channels are Incomplete Records of Strike-Slip Fault Displacement. *Journal of Geophysical Research*, 124, <https://doi.org/10.1029/2019JB018596>.
107. Barnhart**, K.R., Hutton, E., Gasparini, N.M., and **Tucker, G.E.** (2018) Lithology: A Landlab submodule for spatially variable rock properties. *Journal of Open Source Software*, 3(30), 979, <https://doi.org/10.21105/joss.00979>.
106. Gray*, H.J., **Tucker, G.E.**, and Mahan, S. (2018) Application of a luminescence-based sediment transport model. *Geophysical Research Letters*, v. 45(12), p. 6071-6080, <https://doi.org/10.1029/2018GL078210>.
105. Harbert*, S.A., Duvall, A.R., and **Tucker, G.E.** (2018) The Role of Near-Fault Relief Elements in Creating and Maintaining a Strike-Slip Landscape. *Geophysical Research Letters*, 10.1029/2018GL080045
104. Kochanski*, K.A.P., Anderson, R.S., and **Tucker, G.E.** (2018) Statistical classification of self-organized snow surfaces. *Geophysical Research Letters*, v. 45, p. 6532-6541, <https://doi.org/10.1029/2018GL077616>.
103. Langston*, A.L., & **Tucker, G. E.** (2018) Developing and exploring a theory for the lateral erosion of bedrock channels for use in landscape evolution models. *Earth Surface Dynamics*, v. 6, p. 1-27, <https://doi.org/10.5194/esurf-6-1-2018>.
102. Pelletier, J.D., Barron-Gafford, G.A., Gutierrez-Jurado, H., Hinckley, E.S., Istanbuluoglu, E., McGuire, L.A., Niu G.-Y. Poulos, M.J., Rasmussen, C., Richardson, P., Swetnam, T.L., and **Tucker, G.E.** (2018) Which way do you lean? Using slope aspect variations to understand Critical Zone processes and feedbacks. *Earth Surface Processes and Landforms*, v. 43(5), p. 1133-1154, <https://doi.org/10.1002/esp.4306>.
101. Rengers*, F.K., McGuire, L.A., Ebel, B.A., & **Tucker, G.E.** (2018) The evolution of a colluvial hollow to a fluvial channel with periodic steps following two transformational disturbances: A wildfire and a historic flood. *Geomorphology*, v. 309, p. 121-130, <https://doi.org/10.1016/j.geomorph.2018.01.003>.
100. Shobe*, C.M., **Tucker, G. E.**, and Rossi, M.W. (2018) Variable-threshold behavior in rivers arising from hillslope-derived blocks. *Journal of Geophysical Research*, <https://doi.org/10.1029/2017JF004575>.
99. Strauch*, R.E., Istanbuluoglu, E., Nudurupati*, S.S., Bandaragoda, C., Gasparini, N.M., & **Tucker, G.E.** (2018) A hydro-climatological approach to predicting regional landslide probability using Landlab. *Earth Surface Dynamics*, v. 6, p. 49-75, <https://doi.org/10.5194/esurf-6-49-2018>.
98. **Tucker, G. E.**, McCoy, S.W., and Hopley, D.E.J. (2018) A lattice grain model of hillslope evolution. *Earth Surface Dynamics*, v. 6, p. 563-582, <https://doi.org/10.5194/esurf-6-563-2018>.
97. Adams*, J. M., Gasparini, N. M., Hopley**, D. E., **Tucker, G. E.**, Hutton, E. W., Nudurupati*, S. S., and Istanbuluoglu, E. (2017) The Landlab OverlandFlow component: a Python library for computing shallow-water flow across watersheds. *Geoscientific Model Development*, v. 10, p. 1645–1663, <https://doi.org/10.5194/gmd-10-1645-2017>.

96. Glade*, R.C., Anderson, R.S., **Tucker, G.E.** (2017) Block-controlled hillslope form and persistence of topography in rocky landscapes. *Geology*, v. 45(4), p. 311–314, [https://doi.org/ 10.1130/G38665.1](https://doi.org/10.1130/G38665.1).
95. Gray*, H.J., **Tucker, G.E.**, Mahan, S., McGuire, C., and Rhodes, E.J. (2017) On extracting sediment transport information from measurements of luminescence in river sediment. *Journal of Geophysical Research*, v. 122, no. 3, p. 654-677, <https://doi.org/10.1002/2016JF003858>.
94. Gray*, H.J., Shobe*, C.M., Hobley, D.E.J. **, **Tucker, G.E.**, Duvall, A.R., Harbert*, S.A., and Owen, L.A. (2017) Off-fault deformation rate along the southern San Andreas fault at Mecca Hills, southern California, inferred from landscape modeling of curved drainages. *Geology*, v. 46(1), p. 59-62, [https://doi.org/ 10.1130/G39820.1](https://doi.org/10.1130/G39820.1).
93. Hobley**, D. E., Adams*, J. M., Nudurupati*, S. S., Hutton, E. W., Gasparini, N. M., Istanbuluoglu, E., & **Tucker, G. E.** (2017) Creative computing with Landlab: an open-source toolkit for building, coupling, and exploring two-dimensional numerical models of Earth-surface dynamics. *Earth Surface Dynamics*. <https://doi.org/10.5194/esurf-5-21-2017>.
92. Shobe*, C.M., **Tucker, G.E.**, and Barnhart**, K.R. (2017) The SPACE 1.0 model: A Landlab component for 2-D calculation of sediment transport, bedrock erosion, and landscape evolution. *Geoscientific Model Development*, v. 10, p. 4577-4604, <https://doi.org/10.5194/gmd-2017-175>.
91. Ebel**, B.A., Rengers*, F.K., **Tucker, G. E.** (2016) Observed and simulated hydrologic response for a first-order catchment during extreme rainfall three years after wildfire disturbance. *Water Resources Research*, v. 52, [https://doi.org/ 10.1002/2016WR019110](https://doi.org/10.1002/2016WR019110).
90. Rengers*, F.K., Lunacek, M., and **Tucker, G.E.** (2016) Application of an Evolutionary Algorithm for Parameter Optimization in a Gully Erosion Model. *Environmental Modelling and Software*, v. 80, p. 297-305, <https://doi.org/10.1016/j.envsoft.2016.02.033>.
89. Rengers*, F.K., **Tucker, G.E.**, and Mahan, S. (2016) Episodic bedrock erosion by gully-head migration, Colorado High Plains, USA. *Earth Surface Processes and Landforms*, <https://doi.org/10.1002/esp.3929>.
88. Rengers*, F.K., **Tucker, G.E.**, Moody, J.A., and Ebel, B. (2016) Illuminating wildfire erosion and deposition patterns with repeat terrestrial lidar. *Journal of Geophysical Research*, v. 121, no. 3, p. 588-608.
87. Roy*, S.G., Koons, P.O., Osti, B., Upton, P., and **Tucker, G.E.** (2016) Multi-scale characterization of topographic anisotropy. *Computers and Geosciences*, v. 90, part B, p. 102-116, <https://doi.org/10.1016/j.cageo.2015.09.023>.
86. Roy*, S.G., Koons, P.O., Upton, P., and **Tucker, G.E.** (2016) Dynamic links among rock damage, erosion, and strain during orogenesis. *Geology*, <https://doi.org/10.1130/G37753.1>.
85. Roy*, S. G., **Tucker, G. E.**, Koons, P. O., Smith, S. M., & Upton, P. (2016). A fault runs through it: Modeling the influence of rock strength and grain-size distribution in a fault-damaged landscape. *Journal of Geophysical Research: Earth Surface*, 121(10), 1911-1930.
84. Shobe*, C.M., **Tucker, G.E.**, and Anderson, R.S. (2016) Hillslope-derived blocks retard river incision. *Geophysical Research Letters*, v. 43, <https://doi.org/10.1002/2016GL069262>
83. **Tucker, G.E.**, Hobley**, D.E.J., Hutton, E., Gasparini, N.M., Istanbuluoglu, E., Adams*, J.M., and Nudurupati*, S.S. (2016) CellLab-CTS 2015: Continuous-time stochastic cellular automaton modeling using Landlab. *Geoscientific Model Development*, v. 9, p. 823-839, <https://doi.org/10.5194/gmd-9-823-2016>.
82. Duvall, A., and **Tucker, G.E.** (2015) Dynamic Ridges and Valleys in a Strike-Slip Environment. *Journal of Geophysical Research*, v. 120, no. 10, p. 2016-2026, <https://doi.org/10.1002/2015JF003618>.
81. Ebel**, B., Rengers*, F.K., and **Tucker, G.E.** (2015) Aspect-Dependent Soil Saturation and Insight Into Debris-Flow Initiation During Extreme Rainfall in the Colorado Front Range. *Geology*, v. 43, no. 8, p. 659-662.
80. Harris, N., and **Tucker, G.E.** (2015) Soils, slopes, and source rocks: application of a soil chemistry model to nutrient delivery to rift lakes. *Sedimentary Geology*, v. 323, p. 31-42.

79. Langston*, A.L., **Tucker, G.E.**, and Anderson, R.S. (2015) Interpreting climate-modulated processes of terrace development along the Colorado Front Range using a landscape evolution model. *Journal of Geophysical Research*, v. 120, p. 2121–2138, <https://doi.org/10.1002/2014JF003403>.
78. Langston*, A.L., **Tucker, G.E.**, Anderson, R.S., and Anderson, S.P. (2015) Evidence for climatic and hillslope-aspect controls on vadose zone hydrology and implications for saprolite weathering. *Earth Surface Processes and Landforms*, v. 40, no. 9, p. 1254–1269, <https://doi.org/10.1002/esp.3718>.
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71. Anderson, R.S., Anderson, S.P., and **Tucker, G.E.** (2013) Rock damage and regolith transport by frost: an example of climate modulation of geomorphology of the critical zone. *Earth Surface Processes and Landforms*, v. 38, p. 299-316, <https://doi.org/10.1002/esp.3330>.
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69. Godard, V., **Tucker, G.E.**, Fisher, G.B., Burbank, D.W., and Bookhagen, B. (2013) Frequency-dependent landscape response to climatic forcing. *Geophysical Research Letters*, v. 40, p. 859-863, <https://doi.org/10.1002/grl.50253>.
68. Kean, J.W., McCoy*, S.W., **Tucker, G.E.**, Staley, D.M., and Coe, J.A. (2013) Runoff-generated debris flows: Observations and modeling of surge initiation, magnitude, and frequency. *Journal of Geophysical Research*, v. 118, p. 2190-2207, <https://doi.org/10.1002/jgrf.20148>.
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65. **Tucker, G.E.**, and van der Beek, P. (2013) A model for post-orogenic development of a mountain range and its foreland. *Basin Research*, v. 12, p. 1-19, <https://doi.org/10.1111/j.1365-2117.2012.00559.x>.
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RECENT CONFERENCE AND WORKSHOP PRESENTATIONS (2021–23)

- Bras, R.L., Soylu, M.E., Lang, K.A., Rivera-Hernandez, F., Hughes, K.S., Morales, A., Tucker, G.E., Duvall, A.R., and DiBiase, R.A. (2023, December) Collaborative Center for Landslide Geohazards. Presentation at American Geophysical Union fall meeting, San Francisco, CA.
- Gabel, V., and Tucker, G.E. (2023, December) Effects of Sediment Abrasion on Bedload Transport and Landscape Evolution. Presentation at American Geophysical Union fall meeting, San Francisco, CA.
- Guryan, G., Tucker, G.E., and Johnson, J. (2023, December) Modeling feedbacks between sediment cover and bedrock channel width at the landscape scale. Presentation at American Geophysical Union fall meeting, San Francisco, CA.
- Hutton, E.W.H., and Tucker, G.E. (2023, April) Landlab: a modeling platform that promotes the building of FAIR research software. Presentation at European Geosciences General Assembly, Vienna, Austria.
- Kettner, A., Tucker, G.E., Hsu, L., and Overeem, I. (2023, December) Navigating hurdles: embracing FAIR principles for community open-source software. Presentation at American Geophysical Union fall meeting, San Francisco, CA.
- Roberge, L.O., Gasparini, N.M., and Tucker, G.E. (2023, December) ConcentrationTracker: a set of Landlab components for tracking material concentration in sediment. Presentation at American Geophysical Union fall meeting, San Francisco, CA.
- Rossi, M.W., Tucker, G.E., Anderson, R.S., and Anderson, S.P. (2023, December) Agent-based modeling of soil production and sediment transport. Presentation at American Geophysical Union fall meeting, San Francisco, CA.
- Shmilovitz, Y., Rossi, M., Tucker, G.E., Campforts, B., Pederson, J., Morin, E., Armon, M., Enzel, Y., and Haviv, I. (2023, April) Simulating dryland cliffs evolution in response to extreme rainstorms. Presentation at European Geosciences General Assembly, Vienna, Austria.
- Tucker, G.E., Kettner, A., Hutton, E.W.H., Piper, M., Gan, T., Campforts, B., Overeem, I., and Rossi, M. (2023, April) Lessons in FAIR software from the Community Surface Dynamics Modeling System. Invited virtual presentation at European Geosciences General Assembly.
- Tucker, G.E., Gabel, V., and Campforts, B. (2023, January) Exploring the implications of equilibrium channel geometry for long-term landscape evolution. Invited keynote lecture at *Gravel Bed Rivers: Processes, resilience and management in a changing environment*, Villarrica, Chile.
- Jay Alameda, Claire Stirm, Gregory Bauer, Timothy Boerner, Brett Bode, Maytal Dahan, William Gropp, Marlon Pierce, Cynthia Yewdall Grigorescu, Michael Zentner, Meghna Babbar-Sebens, Michael Barton, Daniele Bianchi, Michael Bell, Michel Boufadel, Michael Cianfrocco, Sean Cleveland, Cosan Daskiran, Kjersten Fagnan, ... Greg Tucker. (2022, September). The Delta Gateway: Exploring Community Use of GPU Resources through a Science Gateway. Short-format conference paper presented at Gateways 2022. <https://doi.org/10.5281/zenodo.7089487>
- Aranguiz, T., Duvall, A.R., Tucker, G.E., and Campforts, B. (2022, December) Impact of the Frequency and Intensity of Wet Periods in a Laterally Advected Landscape under Hyper-arid Conditions. Paper presented at American Geophysical Union fall meeting.
- Campforts, B., Shobe, C., Overeem, I., and Tucker, G. (2022, October) The role of landslides in shaping topography and controlling sediment dynamics. Paper presented at Geological Society of America annual meeting.
- Campforts, B., Shobe, C., Overeem, I., and Tucker, G.E. (2022, December) Landsliding sustains persistent ridge and valley migration in mountainous terrain. Paper presented at American Geophysical Union fall meeting.

- Gabel, V., and Tucker, G.E. (2022, May) Rivers and Rocks: A New Model for River Profile Evolution with Heterogeneous Substrate and Bedload Transport. Paper presented at Community Surface Dynamics Modeling System (CSDMS) 2022 Meeting “Environmental Extremes and Earthscape Evolution.”
- Gabel, V., and Tucker, G.E. (2022, December) Rivers and Rocks: Integrating Channel Adjustment, Gravel Attrition, and Bedrock Wear in a Model of River Long-Profile Evolution. Paper presented at American Geophysical Union fall meeting.
- Gan, T., Tucker, G.E., Hutton, E., Piper, M., and Overeem, I. (2022, June) CSDMS data component: a data-model integration tool for earth surface process modeling. Paper presented at EarthCube community meeting.
- Gan, T., Tucker, G.E., Hutton, E., Piper, M., Overeem, I., and Campforts, B. (2022, December) Data components: data-model integration for earth surface process modeling. Paper presented at American Geophysical Union fall meeting.
- Godard, V., and Tucker, G.E. (2022, May) Hillslope response to oscillatory forcing. Paper presented at European Geosciences Union General Assembly.
- Hutton, E., Steckler, M.S., and Tucker, G.E. (2022, December) Taking the land out of landlab: building a marine sequence stratigraphic model using landlab. Paper presented at American Geophysical Union fall meeting.
- Kettner, A., Tucker, G.E., Overeem, I., Gan, T., Hutton, E., and Piper, M. (2022, December) Overcoming challenges in adopting FAIR principles for community open-source software. Paper presented at American Geophysical Union fall meeting.
- Litwin, D., Tucker, G.E., Barnhart, K.R., and Harman, C.J. (2022, May) Evolving hydrological landscapes: diverse morphologies and hydrological processes emerge from a coupled hydrogeomorphic model. Paper presented at Community Surface Dynamics Modeling System (CSDMS) 2022 Meeting “Environmental Extremes and Earthscape Evolution.”
- Litwin, D., Tucker, G.E., Barnhart, K.R., and Harman, C.J. (2022, December) The geomorphic origins of variable source area hydrology. Paper presented at American Geophysical Union fall meeting.
- Piper, M., Hutton, E., and Tucker, G.E. (2022, December) The (bright) future of the Basic Model Interface (BMI). Paper presented at American Geophysical Union fall meeting.
- Rossi, M.W., Anderson, S., Tucker, G., and Anderson, R. (2022, October) Mapping patchy soil mantles using lidar topography in the Rampart Range, CO. Paper presented at Geological Society of America annual meeting.
- Rossi, M.W., Tucker, G.E., Anderson, R.S., and Anderson, S.P. (2022, December) Linking forest dynamics to soil production and hillslope denudation using numerical modeling and high-resolution mapping. Paper presented at American Geophysical Union fall meeting.
- Tucker, G.E. (2022, June) CSDMS overview and opportunities for MCS-SZ4D. Presentation for Computational Solid Earth Science Initiative Coordination Meeting.
- Tucker, G.E., Hutton, E.W.H., Kettner, A.J., Moriarty, J., Overeem, I., Piper, M.D., Gan T., Campforts, B., Peckham, S.D., Stoica, M., McCready, L., Gasparini, N.M., Pfeiffer, A., Istanbuluoglu, E., Gochis, D., and Cabell, R. (2022, July) OpenEandscape: A community platform for computational modeling of Earth-surface processes. Paper presented at NSF CSSI Principal Investigators’ Meeting, Alexandria, VA.
- Tucker, G.E., Hutton, E., Piper, M., Kettner, A., Overeem, I., Gan, T., and Campforts, B. (2022, December) OpenEandscape and CSDMS: modeling resources by and for the earth and planetary surface processes community. Paper presented at American Geophysical Union fall meeting.
- Campforts, B., Shobe, C.M., Overeem, I., and Tucker, G.E. (2021, December) How do landslides alter landscape evolution? Insights from numerical experiments and topographic analysis. Paper presented at American Geophysical Union fall meeting.
- Duvall, A.R., Upton, P., Collett, C., Harbert, S., Williams, S., Flowers, R., Tucker, G., Stone, J., and LaHusen, S. (2021, April) Landscape records 25 million years of tectonic evolution at an oblique convergent margin,

- Marlborough Fault System, New Zealand. Paper presented at European Geoscience Union General Assembly.
- Gabel, V., and Tucker, G.E. (2021, October) River profile evolution across a lithologic boundary: insights from modeling bedload transport. Paper presented at Geological Society of America Annual Meeting.
- Gabel, V., and Tucker, G.E. (2021, December) River profile evolution across a lithologic boundary: insights from modeling bedload transport. Paper presented at American Geophysical Union fall meeting.
- Gan T., Tucker, G.E., Hutton, E., Piper, M., and Campforts, B. (2021, June) CSDMS@HydroShare: find, access, operate, and couple data-model integration tools for FAIR and reproducible research. Paper presented at EarthCube Annual Meeting.
- Gan T., Tucker, G.E., Hutton, E., Piper, M., Castronova, A.M., and Campforts, B. (2021, December) CSDMS@HydroShare: find, access, operate, and couple data-model integration tools for FAIR and reproducible research. Paper presented at American Geophysical Union fall meeting.
- Gasparini, N.M., and Tucker, G. (2021, January) Cyberinfrastructure for modeling surface processes across scales. Lecture presented in webinar series convened by jointly by the Modeling Collaboratory for Subduction Research Coordination Network (MCS RCN), Cyberinfrastructure in Geodynamics (CIG), and Community Surface Dynamics Modeling System (CSDMS).
- Hurst, A.A., Anderson, R.S., Yang, L.M., and Tucker, G.E. (2021, December) Variability in plucking thresholds governs knick zone formation, shape, and rate of migration. Paper presented at American Geophysical Union fall meeting.
- Istanbulluoglu, E., Nudurupati, S.S., Tucker, G.E., Gasparini, N.M., Hobbey, D.E.J., Hutton, E., Barnhart, K.R., and Adams, J.M. (2021, December) On transient semi-arid ecosystem dynamics using Landlab: vegetation shifts, topographic refugia, and response to climate. Paper presented at American Geophysical Union fall meeting.
- Kettner, A., Tucker, G.E., Overeem, I., Hutton, E., Piper, M., Gan T., and Campforts, B. (2021, December) Making earth surface community software more FAIR. Paper presented at American Geophysical Union fall meeting.
- Litwin, D., Harman, C.J., Tucker, G.E., and Barnhart, K.R. (2021, April) A hydrogeomorphic perspective on emergent topographic properties at landscape equilibrium. Paper presented at European Geosciences Union General Assembly.
- Litwin, D., Tucker, G.E., Barnhart, K.R., and Harman, C.J. (2021, December) The hydrogeomorphic evolution of variable source areas. Paper presented at American Geophysical Union fall meeting.
- Rossi, M.W., Tucker, G.E., Anderson, R.S., and Anderson, S.P. (2021, October) The influence of plants on elevation- and aspect-dependent emergence of bedrock tors in the Rampart Range, CO. Paper presented at Geological Society of America Annual Meeting.
- Rossi, M.W., Tucker, G.E., Anderson, R.S., and Anderson, S.P. (2021, December) Driving hillslope evolution models using an Agent-Based Model of forest dynamics and soil production. Paper presented at American Geophysical Union fall meeting.
- Steckel, A., Tucker, G.E., Rossi, M.W., and Hynek, B.M. (2021, December) Landscape evolution modeling of Martian river valley networks. Paper presented at American Geophysical Union fall meeting.
- Tucker, G.E. (2021, February) Community, computing, and education: an overview of the Community Surface Dynamics Modeling System (CSDMS). Invited presentation at Cyberinfrastructure for Volcanology Planning Workshop.
- Tucker, G.E. (2021, June) Brief overview of the Community Surface Dynamics Modeling System (CSDMS). Pre-recorded presentation for GeoPRISMS Workshop.
- Tucker, G.E. (2021, September) Modeling earth's surface with Landlab 2.0. Webinar presentation in CSDMS Fall 2021 webinar series.

Tucker, G.E. (2021, October) Community, computing, and education: an overview of the Community Surface Dynamics Modeling System (CSDMS). Invited presentation at SZ4D MCS-RCN Workshop on Modeling Landscapes and Seascapes.

Wobus, C., Tucker, G.E., and Anderson, R.S. (2021, October) Explaining the “hole” in the Colorado High Plains. Paper presented at Geological Society of America Annual Meeting.

RESEARCH GRANTS

Current Support

Collaborative Research: Facility: CSDMS: Engaging a thriving community of practice in Earth-surface dynamics. U.S. National Science Foundation Geoinformatics Program, PI: G. Tucker, with CU Boulder co-investigators M. Piper, E.W.H. Hutton, A. Kettner, and I. Overeem, and external collaborators N. Gasparini and M. Zellner. 2022–2027, \$5,403,958 to CU Boulder.

Collaborative Research: Frameworks: OpenEarthscape—Transformative Cyberinfrastructure for Modeling and Simulation in the Earth-Surface Science Communities. U.S. National Science Foundation Office of Advanced Cyberinfrastructure (OAC), PI: G. Tucker, with CU Boulder co-investigators J. Moriarty, E.W. Hutton, A. Kettner, and I. Overeem, and external collaborators N. Gasparini, D. Gochis, E. Istanbuluoglu, and A. Pfeiffer. 2021–2026, \$2,562,303 to CU Boulder.

Using NASADEM to Understand Feedbacks among Landslides, Topographic Evolution, and Sediment Dynamics across Tectonic and Climatic Regimes. National Aeronautics and Space Administration, Earth Surface and Interior program. PI: G. Tucker, with co-investigator B. Campforts, and external collaborators A. Duvall and C. Shobe. 2022–2025, \$583,034.

BSF-NSF: Collaborative Research: Deciphering the role of extreme rainstorms and hydroclimatic regime on arid escarpment retreat and sub-cliff slope evolution. U.S. National Science Foundation EAR Division. PI: G. Tucker, with co-investigators M. Rossi and E. Hutton, and external collaborators J. Pederson, Y. Enzel and E. Morin. 2021–2024, \$336,534 to CU Boulder.

Community Facility Support: The Community Surface Dynamics Modeling System (CSDMS). U.S. National Science Foundation EAR Division, PI: G. Tucker, with co-investigators E. Hutton, A. Kettner, and I. Overeem, 2018-21 (extended with supplemental funding to 2022), \$3,916,960.

EarthCube Capabilities: Cloud-Based Accessible and Reproducible Modeling for Water and Sediment Research. U.S. National Science Foundation EAR Division, PI: G. Tucker, with co-investigator E. Hutton, 2020-21 (extended to 2023), \$189,733.

Topographic response to the transition from snowmelt- to rainfall-triggered extremes. U.S. National Science Foundation EAR Division, PI: M. Rossi, with co-investigators R. Anderson and G. Tucker, 2018-21 (extended to 2022), \$404,990.

Assessing a cold-icy versus warm-wet climate for early Mars with valley network morphometry and landscape evolution models. U.S. NASA, PI: B. Hynek, with co-investigators M. Rossi and G. Tucker, 2018-2021 (extended to 2022), \$501,900.

Past Support

Collaborative Research: SI2-SSI: Landlab: a flexible, open-source modeling framework for earth-surface dynamics. U.S. National Science Foundation ACI Division, PI: G. Tucker (in collaboration with Tulane University and University of Washington), 2015-2020 (extended to 2021), \$789,778 to CU Boulder.

Computational Infrastructure for the Community Surface Dynamics Modeling System. U.S. National Science Foundation EAR Division, PI: G. Tucker (as of autumn 2017), 2012-2019, \$5,690,110.

Boulder Creek CZO II: Evolution, Form, Function, and Future of the Critical Zone. U.S. National Science Foundation EAR Division, PI: S. Anderson with co-investigators R. Anderson, N. Molotch, H. Rajaram, and G. Tucker, 2013-2018 (extended to 2019), \$4,500,000.

PREEVENTS Track 1: A transdisciplinary approach to next-gen natural hazard modeling: Improving accuracy and usability of earth surface process models for pre-event risk assessment. U.S. National Science Foundation EAR Division, PI: A. Kettner, with co-investigators I. Overeem and G. Tucker, 2017-2018, \$49,839.

Traveling at the Speed of Light: Using Luminescence to Quantify Sediment Transport. American Chemical Society Petroleum Research Fund, PI: G. Tucker, 2016-2018, \$110,000.

Collaborative Research: Normal-Fault Facets as Recorders of Erosion and Tectonics. U.S. National Science Foundation EAR Geomorphology and Land-use Dynamics Program, PI: G. Tucker, 2013-2015 (extended to 2018), \$214,212 (100%).

Collaborative Research: Tracing the Geomorphic Signature of Strike-Slip Faulting in Marlborough Hill Country, South Island, New Zealand. U.S. National Science Foundation EAR Division, PI: R. Flowers with co-investigator G. Tucker (in collaboration with University of Washington), 2013-2017, ~\$114,000.

Impacts of Vegetation and Climate Change on Dryland Rivers: Lessons from the Rio Puerco, New Mexico. U.S. National Science Foundation EAR Division, PI: G. Tucker, 2013-2016 (extended to 2017), \$299,994.

Collaborative Research: Rivers, Faults, and Growing Mountains: Dynamic Feedback between Crustal Deformation, Rock Strength, and Erosion. U.S. National Science Foundation EAR Division, PI: G. Tucker (in collaboration with University of Maine), 2013-2015 (extended to 2016), \$19,436.

Collaborative Research: SI2-SSE: Component-Based Software Architecture for Computational Landscape Modeling. U.S. National Science Foundation OCI Program, PI: G. Tucker (in collaboration with Tulane University and University of Washington), 2012-2015, \$224,124.

From Peaks to Prairie: Two Natural Experiments in Decadal Landscape Evolution. U.S. National Science Foundation EAR Geomorphology and Land-use Dynamics Program, PI: G. Tucker, 2010-2013 (extended to 2014), \$299,720.

Computer Animation of River Meandering. Arts and Sciences Support for Education Through Technology (ASSETT) development grant, 2012-2013, \$4,200.

Shaking hills and twisted rivers: Tracing the fingerprints of earthquakes past and present in New Zealand's Marlborough Hill Country. National Geographic Society, PI: A. Duvall with co-investigator G. Tucker, 2012-2013, \$22,465.

EarthCube Domain End-User Workshop: Engaging the Critical Zone community to bridge long tail science with big data. U.S. National Science Foundation, PI: A. Aufdenkampe with co-investigators C. Duffy and G. Tucker, 2012-2013, \$99,922 (funding to University of Delaware for workshop support).

Boulder Creek CZO Renewal: Weathered Profile Development in a Rocky Environment and Its Influence on Watershed Hydrology and Biogeochemistry. U.S. National Science Foundation EAR Division, PI: S. Anderson with co-investigators R. Anderson, N. Molotch, H. Rajaram, and G. Tucker, 2012-2013, \$1,000,000.

CZO: Boulder Creek Critical Zone Observatory – Weathered Profile Development in a Rocky Environment and Its Influence on Watershed Hydrology and Biogeochemistry. U.S. National Science Foundation EAR Division, PI: S. Anderson with co-investigators R. Anderson, N. Fierer, A. Sheehan, and G. Tucker, 2007-2012, \$4,249,997.

RAPID: Collecting Field Data in Support of LiDAR Acquisition during Maximum Snow Conditions and Maximum Leaf Out in the Boulder Creek Critical Zone Observatory. U.S. National Science Foundation, PI: S. Anderson with co-investigators N. Molotch and G. Tucker, 4/15/10-4/14/11, \$33,150.

CMG Research: Modeling River Basin Dynamics; Parallel Computing and Advanced Numerical Methods. U.S. National Science Foundation Collaborations in Mathematical Geoscience Program, PI: S. Peckham (Instaar) with co-investigators T. Manteuffel (CU Applied Math), S. McCormick (CU Applied Math), and G. Tucker, September, 2006 to August 2010, \$900,000.

Collaborative Research: The Role of Debris Flows in Shaping Mountainous Terrain. U.S. National Science Foundation EAR Geomorphology and Land-use Dynamics Program, PI: G. Tucker with external collaborator S. Lancaster (Oregon State) and CU collaborator A. Lester, 9/1/07-8/31/10, \$147,583.

SGER: Imaging a Natural Experiment in Drainage Divide Migration. U.S. National Science Foundation EAR Small Grants for Exploratory Research Program, PI: G. Tucker, September 2006 to August 2007, \$4,948 plus high-resolution, research-grade laser altimetry data obtained for a study site east of Denver.

Collaborative Research: Erosional Forcing of Late Quaternary Compressive Strain, West Central Taiwan. U.S. National Science Foundation EAR Tectonics Program, PI: K. Mueller (CU Geological Sciences) with co-investigator G. Tucker and external collaborator P. Upton (Univ. Maine), August 2005 to July 2009 – \$268,700.

Analysis and Modeling of Complex Geomorphic Systems: Technique Development, Data Collection, and Application to Rangeland Terrain. U.S. Army Research Office, PI: G. Tucker, August 2004 to July 2008, \$299,106.

Modelling the Stratigraphy, Geoarchaeology, and Aggregate Resources of English Valley Systems. English Heritage, PI: G. Tucker with co-investigator G. Lock (Univ. Oxford), January 2003 to March 2004, £73,000.

Modeling the Dynamics of Gully and Arroyo Development: Fort Carson and Pinon Canyon Maneuver Site, Colorado. U.S. Army Research Office, PI: G. Tucker, June 2001 to May 2004, \$200,000.

INVITED COLLOQUIA

Hebrew University of Jerusalem, Institute of Earth Sciences, Oct 2021
 University of Colorado, Instaar Seminar, Feb 2020
 US Geological Survey, Rocky Mountain Science Seminar, May 2019
 Colorado State University, Department of Geosciences, February 2017
 University of Wyoming, Department of Geology and Geophysics, February 2016
 University of Washington, Department of Earth and Space Sciences, October 2014
 University of Pennsylvania, Department of Earth and Environmental Sciences, April 2014
 Duke University, Department of Civil and Environmental Engineering, October 2013
 University of Wyoming, Department of Geology and Geophysics, October 2012
 University of Colorado, Department of Geological Sciences, September 2012
 European Geophysical Union, Ralph Alger Bagnold Lecture, April 2012
 University of Colorado, Hydrosociences Seminar, April 2012
 GNS Science, Lower Hutt, New Zealand, February 2012
 University of Kansas, Department of Geography, November 2011
 University of Colorado, Department of Geological Sciences, August 2011
 Institute for Arctic and Alpine Research, February 2011
 ETH Zürich, Switzerland, December 2010
 Centre de Recherches Pétrographiques et Géochimiques, Nancy, France, December 2010
 Université Joseph Fourier, ISTERre, Grenoble, France, November 2010
 Cemagref, Grenoble, France, November 2010
 University of New Mexico, Department of Earth and Planetary Sciences, October 2009
 University of Colorado, Water Sciences Seminar, September 2009
 University of Wyoming, Department of Geology and Geophysics, December 2007
 University of Colorado, Department of Applied Mathematics, November 2007
 Geological Society of London, Bicentennial Conference, September 2007
 University of Calgary, Department of Biological Sciences, April 2007
 University of Minnesota, St. Anthony Falls Hydraulics Laboratory, March 2006
 Colorado State University, Department of Geological Sciences, April 2005
 University of Colorado, Department of Civil, Environmental and Architectural Engineering, March 2005
 University of Colorado, Department of Geography, February 2005
 University of Cincinnati, Department of Geology, October 2004

University of Colorado, INSTAAR, April 2004
University of Cambridge, Department of Earth Sciences, November 2003
Vrije Universiteit Amsterdam, Department of Geography, March 2003
ETH Zürich, Institute of Hydromechanics and Water Resources, February 2003
University of Zürich, Department of Geography, February 2003
University of Leeds, School of Geography, February 2003
University of Bristol, School of Geographical Sciences, November 2002
University of Cambridge, Institute for Theoretical Geophysics, October 2002
University of Oxford, Institute of Archaeology, March 2002
University of Sheffield, Department of Geography, March 2002
Géosciences Rennes, France, December 2001
University of St. Andrews, School of Geography and Geosciences, October 2001
Yale University, Department of Geology and Geophysics, April 2001
Imperial College London, Department of Earth Sciences, February 2001
University of Edinburgh, Department of Geography, February 2001
University of Glasgow, Department of Geography and Topographic Science, February 2001
Kings College London, Department of Geography, November 2000
University of Southampton, Department of Geography, November 2000
University of Oxford, Department of Earth Sciences, October 2000
University of Oxford, Oxford Centre for Industrial and Applied Mathematics, July 2000
Massachusetts Institute of Technology, Earth Resources Laboratory, October 1999
Cornell University, Department of Geological Sciences, January 1997

TEACHING ACTIVITIES

Courses Taught

The Fluid Earth (Upper-level undergraduate course, CU, 2008–present)
Geomorphology Seminar (Graduate reading seminar, CU, 2005–present)
Introduction to Numerical Modeling in Earth and Environmental Sciences (a.k.a. “Modeling Landscapes”) (Graduate/undergraduate course, CU, 2005–present)
Computational Tools (graduate course, CU, 2018, 2020)
Geomorphology (Upper-level undergraduate course, CU, 2016)
Sediment Transport Mechanics (Graduate course, CU, 2006–2015)
Introduction to Physical Geology (Introductory undergraduate lecture course, CU, 2004–2015)
Advanced Geomorphology (Graduate course, CU, 2007)
Seminar in Landscape Evolution (Combined graduate-undergraduate seminar, CU, 2004)
Environmental Modelling (Interdisciplinary M.Sc. course, Oxford, 2000–2003)
Undergraduate tutorial teaching in various topics in first-year *Physical Geography* (Oxford, 2000–2003)
Fluvial and Tectonic Geomorphology (M.Sc. course, Oxford, 2002)
River Basin Dynamics (Upper-level undergraduate course, Oxford, 2001)
GIS in Terrain Analysis (Undergraduate and M.Sc. short course, Oxford, 2000–2001)
Introduction to Hydrology (Upper-level undergraduate course, MIT, 1998)
Process-Response Models of River Basin Evolution (Short course, Perugia, Italy, June 1998)

Post-Doctoral Scholars and Research Associates Supervised

Dr. Tian Gan, 2019-present
Dr. Matthew Rossi, 2016-present
Dr. Benjamin Campforts, 2020-2023
Dr. Katherine Barnhart, 2016-2020
Dr. Simon Kübler, 2018-2020
Dr. Margaux Mouchene, 2018-2019
Dr. Daniel Hobley, 2013-2016
Dr. Mariela Perignon, 2015
Dr. Brian Ebel (CIRES Visiting Fellow), 2012-2013
Dr. Alison Duvall (CIRES Visiting Fellow), 2011-2012
Dr. Cameron W. Wobus (CIRES Visiting Fellow), 2005-2009
Dr. Quintijn Clevis, 2003-2004

Graduate Students Supervised

Current: Vanessa Gabel (Ph.D.)

Graduated: Kelly Kochanski (Ph.D., 2020); Charles Shobe (Ph.D., 2019); Harrison Gray (Ph.D., 2018); Mariela Perignon (Ph.D., 2014); Abigail Langston (Ph.D., 2014); Francis Rengers (Ph.D., 2014); Scott McCoy (Ph.D., 2012); D. Nathan Bradley (Ph.D., 2010); Brian Yanites (Ph.D., 2009); Lee Arnold (D.Phil., 2006); Peter Sólyom (D.Phil., 2005); Parris Lyew-Ayee (D.Phil., 2004); Clare Winter (M.Sc., 2002); Michael Heslop (M.Sc., 2001); Tumbikanani Mtika (M.Sc., 2001)

Undergraduate Advisees (2018-present)

Keely Lawrence (RECCS; UROP) (2019–2021), Jessica Ghent (RECCS; UROP; lab assistant) (2018–2021)

PROFESSIONAL SERVICE

Software Products

Landlab: project leader and co-developer. First release in December 2013. Under active development. (<http://landlab.github.io>).

CHILD: co-developer. First publication in 2000. Under maintenance. (<http://csdms.colorado.edu/wiki/Model:CHILD>).

GOLEM: developer. First publication in 1994. No longer under active development or maintenance.

National / International Service (past 10 years)

Community Surface Dynamics Modeling System (CSDMS): Executive Director, October 2017-present; Deputy Director 2016-2017; Chair of Terrestrial Working Group and Member of Executive Committee, 2007-2016

Panel Reviewer for NASA proposal review, Apr. 2021

Program Reviewer for EarthCube Office, Feb. 2021

Board Member, River Coastal and Estuarine Morphodynamics (RCEM), 2019–present.

Panel Reviewer for US Department of Energy proposal review, Feb. 2019

Member of Executive Committee, Boulder Creek Critical Zone Observatory, 2007-2019

Member, European Geophysical Union Ralph Alger Bagnold Medal Committee, 2012-2016

Member of Editorial Board, *Earth Surface Processes and Landforms*, 2004-2013

Lecturer, National Center for Earth-Surface Dynamics Summer Institute, 2012

Co-convener, American Geophysical Union special session on *Modeling the Terrestrial Landscape*, AGU Fall meeting, December, 2016

Peer reviewer for national and international journals and book publishers, including (2017-present): *Earth Surface Dynamics*; *Earth Surface Processes and Landforms*; *Geophysical Research Letters*; *Geoscientific Model Development*; *Journal of Geophysical Research*; *Natural Hazards and Earth System Science*; *Proceedings of the National Academy of Science*; *Science Advances*

Peer reviewer for funding agencies, including (2017-present): *U.S. National Science Foundation*; *U.S. Army Research Office*; *U.S. Department of Energy*; *NASA*; *ACS Petroleum Research Fund*.

University Service (2018 – present)

Cooperative Institute for Research in Environmental Sciences (CIRES)

2022-present Associate Director, Solid Earth Division
2018-present Member, Executive Committee
2022-2023 Member, Search Committee in Geodesy and Remote Sensing
2020-2022 Member, Career Track Committee
2019-2020 Member, Fellows Reappointment Committee
2018-2019 Member, Graduate Fellowship Review Committee
2017-2018 Member, Innovative Research Proposal Review Committee
2015-present Faculty Affiliate, Earth Lab

Department of Geological Sciences

2022-present Member, Graduate Curriculum Committee
2021 Chair, Tenure Committee for an associate professor in Geological Sciences
2020 Member, Reappointment Committee for an assistant professor in Geological Sciences
2019 Chair, Reappointment Committee for an assistant professor in Geological Sciences
2019 Member, Promotion Committee for an associate professor in Geological Sciences
2018-19 Member, Executive Committee
2018-19 Member, Computational Curriculum Development Committee
2018 Chair, New Department Chair Search Committee
2018 Chair, Promotion Committee for an associate professor in Geological Sciences

University of Colorado

2020 Member, UROP Review Committee
2019 Member, DAICR Benefits Working Group
2018-19 Chair, Computational Earth-Surface Dynamics Search Committee, INSTAAR/CSDMS