

CURRICULUM VITAE

Dr. Peter D. Roopnarine

Birthdate: May 15, 1964

Birthplace: London, United Kingdom

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1 Professional Preparation

1.1 Current Appointments

CURATOR; Department of Invertebrate Zoology & Geology, California Academy of Sciences. 1999 - present.

VISITING PROFESSOR; China University of Geosciences, Wuhan, China. 2017 - present.

RESEARCH ASSOCIATE; University of California Museum of Paleontology, University of California Berkeley. 2005 - present.

RESEARCH PROFESSOR; Department of Biology, San Francisco State University. 2001 - present.

ADJUNCT PROFESSOR; Department of Geosciences, San Francisco State University. 2001 - present.

1.2 Education

Ph.D. GEOLOGY; emphasis Paleontology. 1994. Department of Geology, University of California Davis. Dissertation title: "Systematics, Biogeography and Extinction of Chionine Bivalves in the Neogene of Tropical America." Advisor: Dr. Geerat Vermeij.

M.S. OCEAN SCIENCES; emphasis Biological Oceanography. 1988. Nova Southeastern University Oceanographic Center, Dania, Florida. Thesis title: "A geometrical analysis of shell morphology in the *Nodilittorina ziczac* (Gastropoda: Prosobranchia) species-complex." Advisors: Drs. Nathaniel Apter & Patricia Blackwelder.

B.Sc. BIOLOGY; May 1984. Mount Allison University, New Brunswick, Canada. Thesis title: "The initiation and histology of fission in the fissiparous sea-star *Stephanasterias albula*." Advisor: Dr. Philip Mladenov.

1.3 Professional Experience

- 2008-present. Curator, Dept. of Invertebrate Zoology & Geology, California Academy of Sciences.
- 2012-2015. Department Chair, Dept. of Invertebrate Zoology & Geology, California Academy of Sciences.
- 2012-2013. Chair, The Curators Forum, California Academy of Sciences.
- 2004-2008. Associate Curator, Dept. of Invertebrate Zoology & Geology, California Academy of Sciences.
- 2001-2004. Department Chair, Dept. of Invertebrate Zoology & Geology, California Academy of Sciences.
- 1999-2003. Assistant Curator, Dept. of Invertebrate Zoology & Geology, California Academy of Sciences.
- 1997-1998. Research Associate, Dept. of Geosciences, University of Arizona.
- 1994-1998. Assistant Professor, Dept. of Biology, Southeast Missouri State University.
1994. Lecturer, Biological Oceanography, UC Davis.
1994. Post-doctoral Researcher, Dept. of Geology, UC Davis.
1992. Research Assistant, UC Davis Museum of Nematology.
- 1991-1992. Vertebrate Collections Manager, UC Davis Museum of Zoology.
1991. Research Assistant, UC Davis and NOAA, NITROX Open Water Diver.
1989. Research Assistant, Paleontology, Dept. of Geology, UC Davis.
- 1989-1993. Teaching Assistant, UC Davis.
1988. Teaching Assistant, Dept. of Zoology, University of Maryland.
- 1985-1986. High School Teacher, General Science, Biology and Oceanography, Nowlin Oceanview Private School, Florida.

2 Research Activities

2.1 Current Research

1. Theory of extinction, mass extinctions, and community evolution.
2. Mathematical modelling of paleocommunity dynamics.
3. Eco-evolutionary speciation models.
4. Evolutionary ecology and systematics of Cenozoic marine molluscs.

2.2 Publications

- [1] Hannah M. Palmer, T. M. Hill, **P. D. Roopnarine**, S. E. Myhre, K. R. Reyes, and J. T. Donnenfield Southern California margin benthic foraminiferal assemblages record recent centennial-scale changes in oxygen minimum zone. (2020). *Biogeosciences* (accepted).
- [2] **Roopnarine, P. D.**, K. D. Angielczyk, A. Weik and A. Dineen (2019). Ecological persistence, incumbency and reorganization in the Karoo Basin during the Permian-Triassic transition. *Earth-Science Reviews*. 189:244-263.
- [3] Dineen, A., **P. D. Roopnarine**, M. Fraiser. (2019). Ecological continuity and transformation after the Permo-Triassic mass extinction. *Biology Letters* 15.
- [4] Saulsbury, J. et al. 2019. Evaluating the influences of temperature, primary production, and evolutionary history on bivalve growth rates. *Paleobiology* 45:405-420.
- [5] **Roopnarine, P. D.** Ecological modeling of paleocommunity food webs, (2018). In *Conservation Paleobiology*. Science and Practice. Gregory Dietl and Karl Flessa, editors. University of Chicago Press. ISBN: 9780226506692
- [6] **Roopnarine, P. D.** and A. A. Dineen (2018). Coral reefs in crisis: The reliability of deep-time food web reconstructions as analogs for the present. In *Marine Conservation Paleobiology*. C. Tyler and C. Schneider, editors. Springer. pp. 105–141.
- [7] **Roopnarine, Peter D.**, Kenneth D. Angielczyk, Savannah Olroyd, Sterling J. Nesbitt, Jennifer Botha-Brink, Brandon R. Peacock, Michael O. Day, Roger M. H. Smith, (2018). Comparative Ecological Dynamics Of Permian-Triassic Communities From The Karoo, Luangwa And Ruhuhu Basins Of Southern Africa. *Journal of Vertebrate Paleontology*, 37: 254–272.
- [8] Marshall, C. R. et al., (2018). Quantifying the dark data in museum fossil collections as palaeontology undergoes a second digital revolution. *Biology Letters* 14:20180431.
- [9] Printrakoon, C., **P. D. Roopnarine** and T. Yeemin, 2018. Ecology of Pinnidae (Mollusca: Bivalvia) from The Gulf of Thailand. *Acta Oceanologica Sinica*. 38:52-69.
- [10] Myhre, S. E., K. J. Kroeker, T. M. Hill, **P. D. Roopnarine** and J. P. Kennett (2017). Community benthic paleoecology from high-resolution climate records: Mollusca and Foraminifera in post-glacial environments of the California Margin. *Quaternary Science Reviews*, 155: 179-197.
- [11] **Roopnarine, P. D.** 2016. Ancient food web interactions. *Access Science*, McGraw-Hill Education. <http://dx.doi.org/10.1036/1097-8542.YB160510>
- [12] **Roopnarine, P. D.** and K. D. Angielczyk (2016). The stability of ecological communities as an agent of evolutionary selection: Evidence from the Permian Triassic mass extinction. In *Evolutionary*

Theory: A Hierarchical Perspective. Niles Eldredge, Telmo Pievani, Emanuele Serrelli, and Ilya Tmkin, editors. University of Chicago Press. p. 307-333.

- [13] **Roopnarine, P. D.** and K. D. Angielczyk (2015). Community stability and selective extinction during the Permian-Triassic mass extinction. *Science*, 350: 90-93. DOI: 10.1126/science.aab1371.
- [14] Moffitt, S. E., T. M. Hill, **P. D. Roopnarine** and J. P. Kennett (2015). Response of seafloor ecosystems to abrupt climate change. *Proceedings of the National Academy of Sciences*, 112: 4684-4689. doi: 10.1073/pnas.1417130112.
- [15] **Roopnarine, P. D.** (2014). Humans are apex predators. *Proceedings of the National Academy of Sciences*, doi/10.1073/pnas.1323645111.
- [16] Rocha, L. et al. (2014). Specimen collection: An essential tool. *Science*, 344:814-815.
- [17] Schreiber, H. A., **P. D. Roopnarine** and S. J. Carlson (2014). Three-dimensional morphological variability of Recent rhynchonellide brachiopod crura. *Paleobiology*, 40:640-658.
- [18] **Roopnarine, P. D.** (2013). Ecology and the Tragedy of the Commons. *Sustainability*, 5:749-773.
- [19] **Roopnarine, P.D.** (2013). Omslagpunt voor de aarde (Tipping the Biosphere). In *Meer!*, M. Thieme (ed.). Uitgeverij Jan van Arkel, Netherlands. p. 87-98.
- [20] **Roopnarine, P. D.** and R. Hertog (2013). Detailed food web networks of three Greater Antillean coral reef systems: The Cayman Islands, Cuba and Jamaica. *Dataset Papers in Ecology*, 23, 9 p.
- [21] Goodwin, D. H., D. Gillkin and **P.D. Roopnarine**. (2013). Preliminary evaluation of potential stable isotope and trace element productivity proxies in the oyster *Crassostrea gigas*. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 373:88-97.
- [22] Simons, J. D. et al. (2013). Building a fisheries trophic interaction database for management and modeling research in the Gulf of Mexico large marine ecosystem. *Bulletin of Marine Science*, 89:135-160.
- [23] Vermeij, G. J. and **P. D. Roopnarine**. (2013). Reining in the Red Queen: The dynamics of adaptation and extinction re-examined. *Paleobiology*, 39:560-575.
- [24] **Roopnarine, P. D.** (2012). Red queen for a day: models of symmetry and selection in paleoecology. *Evolutionary Ecology*, 26:1-10.
- [25] **Roopnarine, P. D.** and K. D. Angielczyk (2012). The evolutionary palaeoecology of species and the tragedy of the commons. *Biology Letters*, 8:147-150.
- [26] Barnosky, A. et al. (2012). Approaching a state-shift in Earth's biosphere. *Nature*, 486:52-58.

- [27] Mitchell, J. S., **P. D. Roopnarine** and K. D. Angielczyk. (2012). Late Cretaceous restructuring of terrestrial communities facilitated the End-Cretaceous mass extinction in North America. *Proceedings of the National Academy of Sciences*, 109:18857-61.
- [28] Kavanaugh, D. H., S. L. Archambeault, **P. D. Roopnarine** and J. Ledford (2011). A re-consideration of the taxonomic status of *Nebria lacustris* Casey (Coleoptera: Carabidae: Nebriini) based on multiple datasets - a single species or a species complex? *Zookeys*, 147:199–228.
- [29] Mindell D. P., Fisher B. L., **Roopnarine P. D.**, Eisen J., Mace G. M., et al. (2011). Aggregating, Tagging and Integrating Biodiversity Research. *PLoS ONE* 6(8): e19491. doi:10.1371/journal.pone.0019491
- [30] **Roopnarine, P. D.** (2010). Networks, extinction and paleocommunity food webs. in J. Alroy and G. Hunt, eds., Quantitative Methods in Paleobiology, *The Paleontological Society Papers*, 16: 143-161.
- [31] Goodwin, D. H., A. Cohen and **P. D. Roopnarine** (2010). Forensics on the half shell: A sclerochronological investigation of a modern biological invasion in San Francisco Bay, United States. *Palaios*, 25: 742-753.
- [32] **Roopnarine, P. D.** (2009). Ecological modeling of paleocommunity food webs. in G. Dietl and K. Flessa, eds., Conservation Paleobiology, *The Paleontological Society Papers*, 15: 195-220.
- [33] Bennington, J. B. et al. (2009). Critical Issues of Scale in Paleoecology. *Palaios*, 24: 1-4.
- [34] **Roopnarine, P. D.** (2008). Ecological informatics: Catastrophe theory. In Jørgensen, S. E., editor, *Encyclopedia of Ecology*. Elsevier Press. p. 531-536.
- [35] **Roopnarine, P. D.**, Signorelli, J., and Laumer, C. (2008). Systematic, biogeographic and microhabitat-based morphometric variation of the bivalve *Anomalocardia squamosa* (Bivalvia: Veneridae: Chioninae) in Thailand. *The Raffles Bulletin of Zoology*, 18:95-102.
- [36] Goodwin, D. H., Anderson, L. C. and **P. D. Roopnarine** (2008). Evolutionary origins of novel conchologic growth patterns in tropical American corbulid bivalves. *Evolution and Development*, 10:642-656.
- [37] Vermeij, G. J., and **Roopnarine, P. D.** (2008). The coming Arctic invasion. *Science*, 321: 780-781.
- [38] **Roopnarine, P. D.**, Angielczyk, K. D., Wang, S. C., and Hertog, R. (2007). Trophic network models explain instability of Early Triassic terrestrial communities. *Proceedings of the Royal Society B*, 274:2077-2086.
- [39] **Roopnarine, P. D.** (2006). Extinction cascades and catastrophe in ancient food webs. *Paleobiology*, 32:1–19.

- [40] **Roopnarine, P. D.**, Angielczyk, K. D., and Hertog, R. (2006). Comment on “Statistical independence of escalatory ecological trends in Phanerozoic marine invertebrates”. *Science*, 314:925d.
- [41] **Roopnarine, P. D.** (2005). The likelihood of stratophenetic-based hypotheses of genealogical succession. *Special Papers in Palaeontology*, 73:143–157.
- [42] **Roopnarine, P. D.**, Murphy, M. A., and Buening, N. (2005). Microevolutionary dynamics of the Early Devonian conodont *Wurmiella* from the Great Basin of Nevada. *Paleontologia Electronica*, 8(2):16p.
- [43] Anderson, L. C. and **Roopnarine, P. D.** (2005). Role of constraint and selection in the morphologic evolution of *Caryocorbula* (Mollusca: Corbulidae) from the Caribbean Neogene. *Paleontologia Electronica*, 8(2):18p.
- [44] Angielczyk, K. D., **Roopnarine, P. D.**, and Wang, S. C. (2005). Modeling the role of primary productivity disruption in end-Permian extinctions, Karoo Basin, South Africa. In Lucas, S. G. and Zeigler, K. F., editors, *The Nonmarine Permian*, number 30 in New Mexico Museum of Natural History and Science Bulletin, pages 16–23.
- [45] Elser, J. J., Schampel, J. H., Kyle, M., Watts, J., Carson, E. W., Dowling, T. E., Tang, C., and **Roopnarine, P. D.** (2005). Response of grazing snails to phosphorus enrichment of modern stromatolitic microbial communities. *Freshwater Biology*, 50:1826–1835.
- [46] Dettman, D. L., Flessa, K. W., **Roopnarine, P. D.**, Schöne, B. R., and Goodwin, D. H. (2004). The use of oxygen isotope variation in shells of estuarine mollusks as a quantitative record of seasonal and annual Colorado River discharge. *Geochimica et Cosmochimica Acta*, 68:1253–1263.
- [47] **Roopnarine, P. D.** (2003). Analysis of rates of morphologic evolution. *Annual Reviews of Ecology, Evolution, and Systematics*, 34:605–632.
- [48] Anderson, L. C. and **Roopnarine, P. D.** (2003). Evolution and phylogenetic relationships of Neogene Corbulidae (Bivalvia: Myoidea) of Tropical America. *Journal of Paleontology*, 77:1086–1102.
- [49] Tang, C. M. and **Roopnarine, P. D.** (2003). Complex morphological variability in complex evaporitic systems: Thermal spring snails from the Chihuahuan Desert, Mexico. *Astrobiology*, 3:597–607.
- [50] **Roopnarine, P. D.** (2002a). Book review: Evolutionary History of the Bivalvia. *Veliger*.
- [51] **Roopnarine, P. D.** (2002b). Empiricism at all levels. “Evolutionary Patterns. Growth, Form, and Tempo in the Fossil Record”. *Trends in Ecology and Evolution*, 17:441–442. (Book review).
- [52] Schöne, B. R., Goodwin, D. H., Flessa, K. W., Dettman, D. L., and **Roopnarine, P. D.** (2002). Sclerochronology and growth of the bivalve mollusks *Chione fluctifraga* and *Chione cortezi* in the northern Gulf of California, Mexico. *Veliger*, 45:45–54.

- [53] **Roopnarine, P. D.** (2001a). The description and classification of evolutionary mode in stratophenetic series: A computational approach. *Paleobiology*, 27:446–465.
- [54] **Roopnarine, P. D.** (2001b). A history of diversification, extinction, and invasion in tropical America as derived from species-level phylogenies of chionine genera (Family Veneridae). *Journal of Paleontology*, 75:644–658.
- [55] **Roopnarine, P. D.** (2001c). Testing the hypothesis of heterochrony in morphometric data: Lessons from a bivalved mollusk. In Zelditch, M. L., editor, *Beyond Heterochrony: The Evolution of Development*, pages 271–303. John Wiley and Sons.
- [56] **Roopnarine, P. D.** (2000). Book review: Bivalves, an eon of evolution. *Veliger*.
- [57] **Roopnarine, P. D.** and Vermeij, G. J. (2000). One species becomes two: The case of *Chione cancellata*, the resurrected *C. elevata*, and a phylogenetic analysis of *Chione*. *Journal of Molluscan Studies*, 66:517–534.
- [58] Tang, C. and **Roopnarine, P. D.** (2000). Cretaceous rudist reef mounds of southern Arizona: An educational opportunity for active learning. In McCord, R. D. and Boaz, D., editors, *Mesa Southwest Museum Bulletin. Southwest Paleontological Symposium: Proceedings 2000*, number 7, pages 65–71.
- [59] **Roopnarine, P. D.** and Beussink, A. (1999). Extinction, geographic replacement, and escalation of the bivalve *Chione* in the Late Neogene of Florida. *Paleontologia Electronica*, 2(1). 24p.
- [60] **Roopnarine, P. D.**, Byars, G., and Fitzgerald, P. (1999). Anagenetic evolution, stratophenetic patterns, and random walk models. *Paleobiology*, 25(1):41–57.
- [61] **Roopnarine, P. D.** (1998). Translating trees into taxonomy within Veneridae (Bivalvia): A reply to Harte. *Malacologia*, 39(1–2):221–224.
- [62] **Roopnarine, P. D.**, Fitzgerald, P., Byars, G., and Kilb, K. (1998). Coincident boron profiles of bivalves from the Gulf of California: Implications for the calculation of paleosalinities. *Palaaios*, 13:395–400.
- [63] **Roopnarine, P. D.** (1997). Endemism and extinction of a new genus of Chionine (Bivalvia: Veneridae) bivalve from the late Neogene of Venezuela. *Journal of Paleontology*, 71(6):1039–1046.
- [64] **Roopnarine, P. D.** (1996). Systematics, biogeography and extinction of chionine bivalves (Early Oligocene - Recent) in the Late Neogene of tropical America. *Malacologia*, 38(1–2):103–142.
- [65] **Roopnarine, P. D.** (1995). A re-evaluation of stasis between the species *Chione erosa* and *C. cancellata* (Bivalvia: Veneridae). *Journal of Paleontology*, 69(2):280–287.
- [66] **Roopnarine, P. D.** (1994). Systematics, Biogeography and Extinction of chionine bivalves in the Neogene of tropical America. *Ph.D. Dissertation, University of California Davis*. 280 pp.

2.3 Grants & Funding

- 2018-2020. NSF, “The Holocene and Anthropocene as windows into the future of marine systems.” Co-PIs Hill, Pak. \$120,242.
- 2017-2020. NSF, “Integrated Earth Systems Collaborative Research: Terrestrial Late Permian to Early Triassic Earth Systems in NE Pangea: Insights into the Tempo, Effects, and Causes of the End-Permian Mass Extinction.” Co-PIs Angielczyk, Crowley, Gastaldo, Griessman, Sidor, Tabor, Yang. \$223,816.
- 2016-2020. NSF, “Collaborative Research: Mesozoic Tethyan paleocommunity dynamics: Modelling complexity and stability during times of biotic escalation and community restructuring.” Co-PI: C. Tyler, \$208,863.
- 2015-2020. NSF, “Digitization TCN: Collaborative: Documenting Fossil Marine Invertebrate Communities of the Eastern Pacific - Faunal Responses to Environmental Change over the last 66 million years”. Co-PIs: C. R. Marshall, J. Vendetti, E. Nesbitt, G. Dietl, E. Davis, P. Druckenmiller. \$2.48 million (\$530,274 to CAS).
- 2013-2019. NSF, “ELT Collaborative Research: Restructuring of terrestrial environments following the Permian-Triassic mass extinction”. Co-PIs: K. D. Angielczyk (FMNH), C. Sidor (UW). \$999,938 (\$114,390 to CAS).
- 2013-2014. President’s Faculty Research & Development Grant, “Tissue analysis and shell sclerochronology of oil impacted molluscs”. Co-PIs: D. S. Roopnarine (NSU), L. C. Anderson (SDSMT), \$8,200.
- 2010-2011. Louisiana Sea Grant, “Changes in coastal food webs caused by the Deepwater Horizon crude oil spill: responses by and effects on oysters and other primary consumers”. Co-PIs: L. C. Anderson (Louisiana State U.), D. Goodwin (Denison U.), \$10,000.
- 2008-2010. CAS, “Predicting and assessing impacts of the Cosco Busan San Francisco Bay oil spill”. Co-PI: J. Dumbacher (CAS). \$36,988.
- 2005-2009. NSF, “CMG Collaborative Research: Mathematical Modeling and Bayesian Analysis of Paleocommunity Collapse during Mass Extinctions”. Co-PI: S. Wang (Swarthmore College). \$182,284.
- 2003-2005. NSF Postdoctoral Fellowship in Interdisciplinary Informatics. PI: K. D. Angielczyk. Sponsoring Scientist: P. D. Roopnarine. \$100,000.
- 2003-2005. NSF, “Collaborative Research: Examining origination, extinction, and recovery in terebratulide brachiopods: the integration of phylogeny, morphometrics, and biogeography”. PIs: S. J. Carlson (UC Davis), L. R. Leighton (San Diego State U.). \$215,535.
- 2003-2004. NSF, “Small Grant for Exploratory Research: Geometric morphometric-based visualization and analysis of morphological integration: A new look at bivalve evolution”. \$31,245.

- 1999-2002. NSF, “Tempo and mode of evolution of two lineages of Lower Devonian conodonts”. Co-PI: M. Murphy (UC Davis). \$116,777.
1998. The University of Arizona Foundation Research Grant. \$2,240.
1997. Paleobiology Improvement Grant, Library Endowment Fund, Southeast Missouri State University. \$1,953.
1996. GRFC grant, Southeast Missouri State University. \$4,579.
1994. GRFC grant, Southeast Missouri State University. \$4,959.

2.4 Collaborators, past five years

Kenneth Angielczyk - Integrative Research Center, The Field Museum
 Anthony Barnosky - Jasper Ridge Biology Reserve, Stanford University
 Sandra Carlson - Dept. of Earth & Planetary Sciences, University of California Davis
 Zhong-Qiang Chen- China University of Geosciences, Wuhan
 Edward Davis - Dept. of Earth Sciences, University of Oregon
 Greg Dietl - Paleontological Research Institute
 Patrick Druckenmiller - University of Alaska Museum, Fairbanks
 David Gillikin - Dept. of Geology, Union College
 David Goodwin - Dept. of Geoscience, Denison University
 Austin Hendy - Malacology Dept., Los Angeles Museum of Natural History
 Tessa Hill - Bodega Marine Laboratory, Dept. of Earth & Planetary Sciences, University of California Davis
 Patricia Holroyd - University of California Museum of Paleontology, University of California Berkeley
 David Kavanaugh - Dept. of Entomology, California Academy of Sciences
 James Kennett - Dept. of Earth Science, University of California Santa Barbara
 Kristy Kroeker - Ecology & Evolutionary Biology, University of California Santa Cruz
 Charles Marshall - Dept. of Integrative Biology, University of California Berkeley
 Jonathan Mitchell - Ecology & Evolutionary Biology, University of Michigan
 Sarah Myhre - School of Oceanography, University of Washington
 Elizabeth Nesbitt - Burke Museum, University of Washington
 Sterling Nesbitt - Dept. of Geosciences, Virginia Tech
 Dorothy Pak - Dept. of Earth Sciences, University of California Santa Barbara
 Christian Sidor - Dept. of Biology, University of Washington
 James Simons - Center for Coastal Studies, Texas A&M University
 Nils Stenseth - Centre for Ecological and Evolutionary Synthesis, University of Oslo
 Neil Tabor - Dept. of Geological Sciences, Southern Methodist University
 Carrie Tyler - Dept. of Geology & Environmental Earth Science, Miami University
 Jan Vendetti - Malacology Dept., Los Angeles Museum of Natural History
 Steve Wang - Dept. of Mathematics and Statistics, Swarthmore College
 Geerat Vermeij - Dept. of Earth & Planetary Sciences, University of California Davis

3 Professional Activities & Service

3.1 Professional Service

2019. Co-organizer and co-leader, Paleo To Policy workshop, Bodega Marine Laboratory, California.
- 2017-present. External advisor, BioTip program, Federal Ministry of Education and Research, Germany.
2019. Co-organizer, Symposium “Evolution, communities and ecosystems: systems approach to paleoecology”, 11th North American Paleontological Conference.
2018. Organizing Committee, IGCP 630 conference, Wuhan, China.
2017. Co-organizer, Symposium “co-Evolutionary Dynamics in the Fossil Record”, Annual Meeting, Geological Society of America.
2016. Board of Directors, STEPPE, an NSF-supported consortium promoting multidisciplinary research and education on Earth’s deep-time sedimentary crust.
2016. Co-organizer, Symposium “The Permian-Triassic Crisis and Its Aftermath: Biotic, Climatic, and Environmental Upheavals”, Annual Meeting, Geological Society of America.
2014. Co-organizer, Symposium “ Extreme Environmental Conditions and Biotic Responses during the Permian-Triassic Boundary Crisis and Early Triassic Recovery”, Annual Meeting, Geological Society of America.
2013. Co-organizer, Hell Creek Cretaceous-Paleogene Group Workshop, University of California Berkeley.
2011. Committee member, Committee of Visitors, Surface Earth Processes, NSF.
2011. Panelist, NSF Program in Sedimentary Geology & Paleobiology.
2011. Contributing Editor, *Paleontology Electronica*.
- 2010-present. Curator, *Biodiversity and Systematic Hub, PLOS*.
- 2010-2011. Academic Editor, *PLOS One*.
- 2004-present. Biology Representative, Affiliated Institutes, American Association for the Advancement of Science.
- 2002-present. Board of Directors, *Paleontology Electronica*.
- 2002-2010. Special Issues Editor, Board of Directors, *Paleontology Electronica*.
2007. Chair, Organizing Committee, CalPaleo Annual Meeting.
2005. Co-Organizer, Annual Meetings of the American Malacological Society and the Western Society of Malacologists.
2005. President, Western Society of Malacologists.
2004. President-Elect and Council Member, Western Society of Malacologists.

- 2003-2004. Associate Editor, Journal of Paleontology.
- 2003. Organizing Committee, Symposium: *Biodiversity: Past, Present and Future*. 84th Annual Meeting of the AAAS, Pacific Division.
- 2002. Roopnarine, P. D. and C. M. Tang, organizers. *Evolutionary paleobiology and paleoecology of the Bivalvia*. Special Session. Geological Society of America. Annual Meeting, Denver.
- 2002-2003. Vice-President, SEPM/Society for Sedimentary Geology, Pacific Division.
- 2001-2003. Schuchert Award Committee, The Paleontological Society.
- 2001. Organized the first *CAS Morphometrics Workshop*, hosted jointly with UC Berkeley.
- 2001. Organizing Committee, Seventh North American Paleontological Conference.
- 2000-2004. Councilor-At-Large, American Malacological Society.

3.2 Awards and Honors

- 2015. STEPPE Featured Researcher.
- 2013. Featured lecturer, Think Evolution V, University of California Berkeley.
- 2009. Featured Scientist, Year of Science 2009.
- 2004. Journal of Paleontology, Best Paper Award.
- 2003-2005. Paleontological Society Distinguished Speaker.
- 2000. Elected Fellow, California Academy of Sciences.
- 1999. R. Tucker Abbott Visiting Curator. Bailey-Matthews Museum, Sanibel, Florida.
- 1995. Graduate Research Fellow allocation. Southeast Missouri State University.
- 1995. Proposal Development Award. Southeast Missouri State University.
- 1984. David S. Fensom Award for Excellence in Research. Mount Allison University.

3.3 Invited Professional Presentations

- 2019. Workshop leader, “Stability: Transience, persistence and timescales.” Federal Ministry of Education and Research, Germany.
- 2019. Distinguished Speaker, Dept. of Earth and Climate Sciences, San Francisco State University.
- 2019. Seminar Colloquium, Dept. of Geosciences and Geological and Petroleum Engineering, Missouri Science & Technology University, Rolla, Missouri.
- 2018. Plenary Speaker, IGCP 630, Wuhan, China.
- 2017. Plenary Speaker, Fourth International Conference of Geobiology, Wuhan, China.
- 2017. Seminar Colloquium, Dept. of Geosciences, Miami University of Ohio.
- 2016. Symposium, “Evolution of the Earth System”, Annual Meeting, American Geophysical Union.
- 2016. K-Pg Working Group, Dept. of Geosciences, UC Berkeley.
- 2015. Keynote Speaker, “Early and Middle Triassic Restructuring Following the End-Permian Mass Extinction”, Annual Meeting, Geological Society of America.

2015. Seminar Colloquium, Dept. of Mathematics and Statistics, Swarthmore College.
2014. Keynote Speaker, “Topics in Paleoecology: Modern Analogues and Ancient Systems”, Annual Meeting, Geological Society of America.
2014. International Biogeosciences Conference, Wuhan, China.
2013. K-Pg Food Webs Workshop, UC Berkeley.
2013. Seminar Colloquium, Bodega Marine Laboratory, UC Davis.
2013. Fossil Coffee, UCMP, UC Berkeley.
2013. Bay Area Science Series, Romberg Tiburon Center for Marine Sciences.
2012. Keynote Speaker, Centenary Meeting, Paläontologisches Gesellschaft, Museum für Naturkunde, Berlin.
2011. Seminar Colloquium, Paläontologisches Institut und Museum der Universität Zürich.
2011. Advisory Council Retreat, Gulf of the Farallones National Marine Sanctuary.
2011. Lessons from Deepwater Horizon, American Association of Museums.
2010. Quantitative Paleobiology Symposium, Paleontological Society.
2010. Plenary Speaker, Student Symposium, Western Society of Naturalists.
2010. Seminar Colloquium, Dept. of Geology, UC Davis.
2010. Seminar Colloquium, Dept. of Geology, San Jose State University.
2010. Seminar Colloquium, Integrative Biology, UC Berkeley.
2009. Conservation Paleobiology Symposium, Paleontological Society.
2009. Plenary speaker, First Bay Area NSF-REU Symposium.
2009. Joint California Academy of Sciences and UC San Francisco Symposium.
2009. Fossil Coffee, University of California Museum of Paleontology.
2008. Climate Change Symposium, Annual Meeting of the California Science Teachers’ Association.
2007. Seminar Colloquium, Dept. of Geology, The Field Museum.
2007. Special Symposium – Environmental Change, Extinction Risk, and the Maintenance of Biodiversity through Time, Annual Meeting Ecological Society of America. San Jose.
2007. Hewitt Club Lecture Series, Dept. of Geology, University of California Riverside.
2007. Paleobiology Seminar, Dept. of Geological and Environmental Sciences, Stanford University.
2007. Geological Sciences and Marine Chemistry Seminar, Scripps Institution of Oceanography.
2006. Evolutionary Morphology Seminar Series, Committee on Evolutionary Biology, University of Chicago.
2004. Fossil Coffee Seminar Series, University of California Museum of Paleontology, UC Berkeley.
2004. Biology of Extinction, First Okazaki Research Conference, Okazaki Research Institute, Japan.
2003. Seminar Colloquium, Smithsonian Tropical Research Institute, Panama.
2003. Whole Earth Seminar Series, Earth Sciences Dept., University of California Santa Cruz.
2003. Seminar Colloquium, Geosciences Dept., San Francisco State University.
2002. Special Symposium – Systematics & Stratigraphy, ECOS VIII, Toulouse, France.
2002. Seminar Colloquium, Dept. of Geological Sciences, University of Iowa.
2001. Seminar Colloquium, Dept. of Integrative Biology, University of California Berkeley.
2000. Seminar Colloquium, Dept. of Geology, University of California Davis.
2000. Seminar Colloquium, Dept. of Geophysical Sciences, University of Chicago.

2000. Evolutionary Morphology Seminar Series, Committee on Evolutionary Biology, University of Chicago.

3.4 Professional Organizations

American Association for the Advancement of Science
American Geophysical Union
Centro Estudios de Almejas Muertas, University of Arizona
The Geological Society of America
Paläontologisches Gesellschaft
The Paleontological Society
Western Society of Malacologists

3.5 Reviewer for:

African Journal of Mathematics; American Naturalist; Axios; The Biological Bulletin; Biological Reviews; Bulletin of American Paleontology; Ecological Complexity; Environmental Biology of Fishes; Evolution; Frontiers in Geology; GeoBios; Global Planetary Change; Journal of Aquatic Living Resources; Journal of Biogeography; Journal of Geophysical Research; Journal of the Linnean Society of London; Journal of Molluscan Studies; Journal of Paleontology; Malacologia; National Geographic; National Research Council, United Kingdom; National Science Foundation; Nature; Nature Communications; Nautilus; Palaeogeography, Palaeoclimatology, Palaeoecology; Palaeontology; Palaios; Paleobiology; Paleontologia Electronica; Petroleum Research Fund, American Chemical Society; PLoS One; Proceedings of the California Academy of Sciences; Proceedings of the National Academy of Sciences; Proceedings of the Royal Society, B; Science; Systematic Biology; Trends in Ecology and Evolution; Veliger

4 Academic & Educational Service

4.1 Postdoctoral Advisees

2020-present. Roxanne Banker, California Academy of Sciences. NSF Postdoctoral Researcher.
2019-present. Yuangeng Huang, California Academy of Sciences. NSF Postdoctoral Researcher.
2015-2019. Ashley Dineen, University of California Berkeley. NSF Postdoctoral Researcher.
2006-2007. Kenneth Angielczyk, Department of Geology, The Field Museum. NSF Postdoctoral Researcher.
2003-2005. Kenneth Angielczyk, Department of Geology, The Field Museum. NSF Interdisciplinary Informatics Postdoctoral Fellow.
2000-2001. Lindsey Leighton, Department of Geosciences, University of Alberta. NSF Earth Sciences Postdoctoral Fellow.

4.2 Graduate Student Advisees

- 2019-present. Min Zhang, China University of Geosciences.
2019-present. Tatiana Marrone, San Francisco State University.
2016-present. Courtney Chin, San Francisco State University.
2015-2020. Allen Weik, San Francisco State University.
2010-2012. Cheewarat Printrakoon, Kasetsart University, Bangkok, Thailand.
2009. Rachel Hertog, M.S., Biology, San Francisco State University.
2004. Zita Maliga, M.S., Geosciences, San Francisco State University.
1998. Angie Charles, Army Corps Engineers. M.S., Biology, Southeast Missouri State University.
1997. Brent Hopkins. M.S., Biology, Southeast Missouri State University.
1997. Richard Pelikan, Computer Services, Southeast Missouri State University. M.S., Biology, Southeast Missouri State University.

4.3 Courses taught

2006. *Historical Geology*, San Francisco State University.
2003. *The Nature of Species*, California Academy of Sciences.
2003. *Evolution and the Fossil Record*, California Academy of Sciences.
2001. *History of Life*, San Francisco State University.
1998. *Paleontology*, University of Arizona.
1997. *Biometry*, Southeast Missouri State University.
1994-1997. *General Zoology*, Southeast Missouri State University.
1994-1997. *Advanced Topics in Aquatic Invertebrate Zoology*, Southeast Missouri State University.
1994-1997. *Advanced Topics in Terrestrial Invertebrate Zoology*, Southeast Missouri State University.
1994. *Biological Oceanography*, University of California Davis.

5 Public Service, Outreach and Communication

5.1 Service

- 2018 - present. Board member, YES, Nature to Neighborhoods.

5.2 Invited Public Presentations

2016. Science Salon, ManyLabs, San Francisco.
2013. Museum Series, Bohemian Club Summer Gathering.
2012. The Foundation Lectures, Castro Valley Education Foundation.

- 2010. Pritzker Lecture Series, California Academy of Sciences.
- 2010. The Zero1 Symposium, Leonardo Society.
- 2009. Science Cafe, California Academy of Sciences.
- 2009. Invited Speaker, Friends of San Pedro Valley, Pacifica, California.
- 2008. Lecturer, Filoli Gardens, San Mateo, California.
- 2006. Invited Speaker, The Environmental Alliance, Martinez, California.
- 2006. Lecturer, Audubon Canyon Ranch, Pt. Reyes National Seashore.
- 2005. Distinguished Speaker Series, California State University East Bay.
- 2004. Members' Lecture, California Academy of Sciences.
- 2001. Members' Lecture, California Academy of Sciences.

5.3 Popular articles

- [1] 2017. Betting on Conservation. *bioGraphic*.
<https://www.biographic.com/posts/sto/betting-on-conservation>
- [2] 2006. Tomorrow is too soon. *California Wild*.

5.4 Film & Documentaries

- [1] 2012. Cannonball Chemistry. *Mythbusters TV Series*.
http://www.imdb.com/title/tt2498690/?ref_=nm_fimg_slf_1
- [2] 2010. Call of Life. *Species Alliance*. <http://www.imdb.com/title/tt1002965/>

5.5 Online Videos

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| 2020. | Fossil Forward | https://youtu.be/2vEu9tRhZ9M |
| 2017. | Why I March for Science | https://youtu.be/9vcoF9UcWBU |
| 2016. | Food Webs | https://youtu.be/xrl6FIj6kc4 |
| 2016. | Global Change Scientist | https://youtu.be/xJTvAaK84jA |
| 2016. | Oysters and the Gulf Oil Spill | https://youtu.be/65gA5sCxsOo |
| 2015. | Take a Virtual Dive in a Kelp Forest | https://youtu.be/HGMvPqfcDOK |
| 2013. | Fossils: Chat with an Academy Scientist | https://youtu.be/FOde1NUySjc |
| 2013 | Food Webs | https://youtu.be/qa2HZpn4EN8 |
| 2010. | Bioforum: Climate Change | http://library.fora.tv/2010/04/17/BioForum_Intro_by_Dr_Peter_Roopnarine |
| 2010. | Marine food webs and the environment | http://www.leonardo.info/isast/2010symposium_talks-Roopnarine.html |
| 2010. | Ecosystem Impact of the Deepwater Horizon Disaster | http://library.fora.tv/2010/11/09/Ecosystem_Impact_of_the_Deepwater_Horizon_Disaster |
| 2010. | Gulf Oil Spill Effects On Wildlife | https://youtu.be/8Uax5FRWnvs |

5.6 Selected News Coverage

- [1] 2020. Thousands of Fossils Sit Forgotten in Museum Drawers. How one Paleontologist is Changing That. *Discover Magazine*.
<https://www.discovermagazine.com/planet-earth/thousands-of-fossils-sit-forgotten-in-museum-drawers-how-one-paleontologist>
- [2] 2019. Scientists call changes to Endangered Species Act 'short-sighted'. *ABC7 News*.
<https://abc7news.com/politics/scientists-call-changes-to-endangered-species-act-short-sighted/5463351/>
- [3] 2019. New study explores ecosystem stability. *Science Daily*.
<https://www.sciencedaily.com/releases/2018/11/181128114427.htm>
- [4] 2018. Scientists quantify the vast and valuable finds stored on museum shelves. *Science Daily*.
<https://www.sciencedaily.com/releases/2018/09/180920102122.htm>
- [5] 2015. Study explores ancient ecosystem response to a 'big five' mass extinction. *Phys.org*.
<http://phys.org/news/2015-10-explores-ancient-ecosystem-response-big.html>
- [6] 2015. Who dies and who survives during a mass extinction? A tantalizing clue. *Washington Post*.
https://www.washingtonpost.com/news/morning-mix/wp/2015/10/08/who-dies-and-who-survives-during-a-mass-extinction-a-tantalizing-clue/?utm_term=.7b2cf559dedb

- [7] 2015. The Best Way to Prepare for an Earthquake? Take Xanax. *The Bold Italic - San Francisco*.
<https://thebolditalic.com/the-best-way-to-prepare-for-an-earthquake-take-xanax-the-bold-italic-san-francisco-e52b45e1aaec#.38vdtbo9w>
- [8] 2015. Climate Change Could Damage Oceans for Millennia. *NBC News*.
<http://www.nbcnews.com/science/environment/climate-change-could-wreak-millennia-havoc-oceans-n332781>
- [9] 2014. Are We in the Early Stages of a New Mass Extinction? Its Complicated. *Huffington Post*.
http://www.huffingtonpost.com/annalee-newitz/the-apocalypse-is-complicated_b_5200754.html
- [10] 2013. New Giant Dinosaur Was the Apex Predator Before T-Rex. *Wired*.
<https://www.wired.com/2013/11/new-dinosaur-siats/>
- [11] 2012. Two Years After the BP Spill, Gulf Oysters Are Full Of Heavy Metals. *Mother Jones*.
<http://www.motherjones.com/blue-marble/2012/04/heavy-metal-oysters>
- [12] 2012. Scientist Defends Research on Heavy Metals in Oysters. *Food Safety News*.
<http://www.foodsafetynews.com/2012/04/scientist-defends-heavy-metals-in-oysters-research/>
- [13] 2012. Cretaceous Extinction: Blame The Ecosystem (And Chicxulub). *Science Codex*.
http://www.sciencecodex.com/cretaceous_extinction_blame_the_ecosystem_and_chicxulub-101068
- [14] 2012. N.Y.'s Cuomo links storm, climate change. *SFGate*.
<http://www.sfgate.com/science/article/N-Y-s-Cuomo-links-storm-climate-change-3998876.php>
- [15] 2010. Q. and A.: Tracking Oil Through the Food Web. *New York Times*.
http://green.blogs.nytimes.com/2010/06/08/tracking-oil-through-the-food-web/?_r=0