PETER D. ROOPNARINE

PERSONAL INFORMATION

Born in United Kingdom, 15 May 1964

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website https://www.calacademy.org/staff/ibss/invertebrate-zoology-and-geology/peter-roopnarine

ORCID ID 0000-0002-9811-1176

RESEARCH PROFILE

Earth systems and global change scientist interested in the dynamics, evolution and modeling of ancient and modern ecosystems.

EDUCATION

1989-1994 The University of California Davis

Ph.D. Geology

Dissertation title: "Systematics, Biogeography and Extinction of Chionine Bivalves in the Neogene of Tropical America." Advisor: Dr. Geerat Vermeij.

1985-1988 Nova Southeastern University, Florida

Masters of Science, Oceanography

Thesis title: "A geometrical analysis of shell morphology in the *Nodilittorina ziczac* (Gastropoda: Prosobranchia) species-complex." Advisors: Drs. Nathaniel Apter & Patricia Blackwelder.

1980-1984 Mount Allison University, Canada

Bachelors of Science, Biology

Thesis title: "The initiation and histology of fission in the fissiparous sea-star *Stephanasterias albula*." Advisor: Dr. Philip Mladenov.

CURRENT APPOINTMENTS

1999-Present Curator, California Academy of Sciences

California Academy of Sciences

Curator of Geology and Paleontology.

2017-present Visiting Professor, China University of Geosciences, Wuhan

China University of Geosciences, Wuhan

Visiting Professor of Geosciences.

2005-present Research Associate, University of California Berkeley

University of California, Berkeley

Museum Research Associate of the University of California Museum of Paleontology.

2001-present Research Professor, San Francisco State University

San Francisco State University

Research and graduate professor in the Department of Biology.

2001-present Adjunct Professor, San Francisco State University

San Francisco State University

Adjunct and graduate professor in the Department of Geosciences.

HONOURS AND AWARDS

2024 Fellow

AAAS

Elected a Fellow of the American Association for the Advancement of Science.

2023 Fellow

Paleontological Society

Elected a Fellow of the Paleontological Society.

2021 Fellow

Geological Society of America

Elected a Fellow of the Geological Society of America.

2020 Full Member

Sigma Xi

Elected to Full Membership in Sigma Xi, the Scientific Research Honor Society.

2015 Featured Researcher

STEPPE

Featured Researcher of the STEPPE (Sedimentary geology, Time, Environment, Paleontology, Paleoclimate, and Energy) consortium of the Geological Society of America, the Paleontological Society, and the Society for Sedimentary Geology. Supported by the National Science Foundation.

2013 Featured Lecturer

Think Evolution V

Featured Lecturer for Think Evolution, a summer institute for science teachers. Sponsored by the University of California Museum of Paleontology, in partnership with the National Center for Science Education, the Beacon Center for the Study of Evolution in Action, the California Academy of Sciences, and the Howard Hughes Medical Institute.

2009 Featured Scientist

Year of Science

Featured Scientist for the Year of Science, 2009. sponsored by the Coalition for the Public Understanding of Science.

2004 Best Paper Award

Paleontological Society

Best paper, *Journal of Paleontology.*

2003–2005 Distinguished Speaker

Paleontological Society

Paleontological Society Distinguished Speaker.

2000 Fellow

California Academy of Sciences

Elected Fellow of the California Academy of Sciences.

1999 R. Tucker Abbott Visiting Curator

Bailey-Matthews Museum

R. Tucker Abbot Visiting Curator, 1999.

1995 Graduate Research Fellow Award

Southeast Missouri State University

Graduate Research Fellow allocation.

1995 Proposal Development Award

Southeast Missouri State University

Award for proposal development.

1984 David S. Fensom Award

Mount Allison University

David S. Fensom Award for Excellence in Research.

1983 The Florentine Society

PROFESSIONAL EXPERIENCE

2008–Present Curator, California Academy of Sciences

Curator, Department of Invertebrate Zoology & Geology.

2017–present Visiting Professor, China University of Geosciences

Visiting Professor, Key Paleontology Laboratory, China University of Geosciences, Wuhan, China.

2012–2013, 2022-present Chair, The Curators Forum

Chairperson of Curators Forum, California Academy of Sciences.

2011–2014 Department Chair, California Academy of Sciences

Department Chair, Department of Invertebrate Zoology & Geology.

2017–2020 Associate Curator, California Academy of Sciences

Associate Curator, Department of Invertebrate Zoology & Geology.

2001–2004 Department Chair, California Academy of Sciences

Department Chair, Department of Invertebrate Zoology & Geology.

1999–2003 Assistant Curator, California Academy of Sciences

Assistant Curator, Department of Invertebrate Zoology & Geology.

1997–1998 Research Associate, University of Arizona

Research Associate, Department of Geosciences.

1994–1998 Assistant Professor, Southeast Missouri State University

Assistant Professor, Department of Biology.

1994 Lecturer, University of California Davis

Lecturer of Biological Oceanography, Department of Geology.

1994 Post-doctoral scholar, University of California Davis

Post-doctoral scholar, Department of Geology.

1992 Research Assistant, University of California Davis

Research Assistant, Museum of Nematology.

1991-1992 Collections Manager, University of California Davis

Collections Manager, Museum of Zoology.

1989 Research Assistant, University of California Davis

Research Assistant, Department of Geology.

1989-1993 Teaching Assistant, University of California Davis

Teaching Assistant, Department of Geology, Ecology Graduate Group.

1988 Teaching Assistant, University of Maryland

Teaching Assistant, Department of Zoology.

1985–1986 Teacher, Nowlin Oceanview Private School

High school teacher, General Science, Biology, and Oceanography.

grants & funding

National Science Foundation, 2020 — NSF EAR, "EAGER: Applying Paleoecosystem-Mass Extinction Theory to Socio-Economic Systems During COVID-19". $242,627

National Science Foundation 2018 — NSF OCE, "The Holocene and Anthropocene as windows into the future of marine systems." Co-PIs T. Hill, D. Pak. $120,242.

National Science Foundation 2017 — 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 K. Angielczyk, J. Crowley, R. Gastaldo, J. Griessman, C. Sidor, N. Tabor, W. Yang. $223,816.

National Science Foundation 2016 — NSF EAR, "Collaborative Research: Mesozoic Tethyan paleocommunity dynamics: Modelling complexity and stablity during times of biotic escalation and community restructuring." Co-PI: C. Tyler. $208,863.

National Science Foundation 2015 — NSF DBI, "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. $530,274.

National Science Foundation 2013 — NSF EAR, "ELT Collaborative Research: Restructuring of terrestrial environments following the Permian-Triassic mass extinction". Co-PIs: K. D. Angielczyk, C. Sidor. $114,390.

Nova Southeastern University 2013 — President's Faculty Research & Development Grant, "Tissue analysis and shell sclerochronology of oil impacted molluscs". Co-PIs: D. S. Roopnarine, L. C. Anderson. $8,200.

Louisiana Sea Grant 2010 — "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, D. Goodwin. $10,000.

California Academy of Sciences 2008 — "Predicting and assessing impacts of the Cosco Busan San Fransicso Bay oil

spill". Co-PI: J. Dumbacher. $36,988.

National Science Foundation 2005

"CMG Collaborative Research: Mathematical Modeling and Bayesian Analysis of Paleocommunity Collapse during Mass Extinctions". Co-PI: S. Wang. $182,284.

National Science Foundation 2003

Postdoctoral Fellowship in Interdisciplinary Informatics. PI: K. D. Angielczyk. Sponsoring Scientist: P. D. Roopnarine. $100,000.

National Science Foundation 2003

"Collaborative Research: Examining origination, extinction, and recovery in terebratulide brachiopods: the integration of phylogeny, morphometrics, and biogeography". PIs: S. J. Carlson, L. R. Leighton. $215,535.

National Science Foundation 2003

NSF EAR, "SGER: Geometric morphometric-based visualization and analysis of morphological integration: A new look at bivalve evolution". $31,245.

National Science Foundation 1999

NSF EAR "Tempo and mode of evolution of two lineages of Lower Devonian conodonts". Co-PI: M. Murphy. $116,777.

University of Arizona 1998

UA Foundation Research Grant. $2,240.

Paleobiology Improvement Grant, Library Endowment Fund. $1,953.

Southeast Missouri State University 1994-1997

Graduate Research Funding Committee Grant. $4,579.

Graduate Research Funding Committee Grant. $4,959.

PUBLICATIONS

2024

Otoo, K. A., **P. D. Roopnarine**, M. I. Coates and K. D. Angielczyk. Ecological persistence in vertebrate communities through the end-Devonian mass extinction and the origin of terrestrial vertebrates. *Proceedings of the National Academy of Sciences* (*in review*)

Y. G. Huang, P. D. **Roopnarine** and Z. Q. Chen. A practical guide to analyze ecological dynamics and functional structures of paleo-communities. *Nature Protocols* (*in revision*)

Roopnarine, P. D. and D. H. Goodwin. The geometry of conchiferan shell evolution: Origins of coiling and bivalved morphologies. *Journal of Molluscan Studies* (*in press*)

2023

Roopnarine, P. D., M. Abarca, D. Goodwin and J. Russack. Economic cascades, tipping points, and the costs of a business-as-usual approach to COVID-19. *Frontiers in Physics*. 11:1074704. doi: 10.3389/fphy.2023.1074704

Huang, Y., ZQ Chen, **P. D. Roopnarine**, M. J. Benton, L. Zhao, X. Feng and Z. Li. 2023. The stability and collapse of marine ecosystems during the Permian-Triassic mass extinction. *Current Biology*, 33:1-12. doi.org/10.1016/j.cub.2023.02.007

Sampson, S. D. and **P. D. Roopnarine**. 2023. We Need to Think about Conservation on a Different Timescale. *Scientific American*, October 2023.

2022

Roopnarine, P. D., R. M. Banker and S. Sampson. 2022. Impact of the extinct megaherbivore Steller's sea cow (*Hydrodamalis gigas*) on kelp forest resilience. *Frontiers in Ecology and Evolution*. doi.org/10.3389/fevo.2022.983558

Roopnarine, P. D. 2022. Inverse relationship of evolutionary rates and interval of time over which rates were measured - Palaeontology's Greatest Ever Graphs. *Palaeontology Association U. K. Newsletter*, 109:66-69.

Banker, R. M., A. A. Dineen, M. G. Sorman, C. L. Tyler and P. D. **Roopnarine**. 2022. Beyond functional diversity: the importance of trophic position to understanding functional processes in community evolution. *Frontiers in Ecology and Evolution*. doi.org/10.3389/fevo.2022.983374.

Palmer, H. M. et al. 2022. Ecological and environmental stability in offshore Southern California Marine Basins through the Holocene. *Paleoceanography and Paleoclimatology* e2021PA004373.

2021

Roopnarine, P. D. and R. M. W. Banker. 2021. Perspective: Ecological stasis on geological timescales. *Science* 372:237-238.

Huang, Y., Z. Q. Chen, P. D. **Roopnarine**, M. J. Benton, W. Yang, J. Liu and L. Zhao. 2021. Ecological dynamics of terrestrial and freshwater ecosystems across three mid-Phanerozoic mass extinctions from northwest China. *Proceedings of the Royal Society B* 288:20210148.

Roopnarine, D. S., P. D. **Roopnarine**, L. C. Anderson, J. H. Hwang and S. Patel. 2021. Metaplasia of respiratory and digestive tissues in the Eastern oyster *Crassostrea virginica* associated with the Deepwater Horizon oil spill. *PLoS One* 16 (9): e0247739.

Yang, W. et al. 2021. Paleoenvironmental and Paleoclimatic Evolution and Cyclo- and Chrono-Stratigraphy of Upper Permian-Lower Triassic Fluvial-Lacustrine Deposits in Bogda Mountains, NW China – Implications for Diachronous Plant Evolution Across the Permian-Triassic Boundary. *Earth-Science Reviews* 103741.

2020

Kempf, Hannah L., Ian O. Castro, Ashley A. Dineen, Carrie L. Tyler, and Peter D. **Roopnarine**. 2020. Comparisons of Late Ordovician ecosystem dynamics before and after the Richmondian invasion reveal consequences of invasive species in benthic marine paleocommunities. *Paleobiology* 46:320-336.

Palmer, Hannah M., T. M. Hill, P. D. **Roopnarine**, S. E. Myhre, K. R. Reyes, and J. T. Donnenfield. 2020. Southern California margin benthic foraminiferal assemblages record recent centennial-scale changes in oxygen minimum zone. *Biogeosciences* 17:2923–2937.

2019

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.

Dineen, A., P. D. **Roopnarine**, M. Fraiser. 2019. Ecological continuity and transformation after the Permo-Triassic mass extinction. *Biology Letters* 15.

Saulsbury, J. et al. 2019. Evaluating the influences of temperature, primary production, and evolutionary history on bivalve growth rates. *Paleobiology* 45:405-420.

2018

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.

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*. Carrie Tyler and Chris Schneider, editors. Springer.

Roopnarine, P. D., Kenneth D. Angielczyk, Savannah Olroyd, Sterling J. Nesbitt, Jennifer Botha-Brink, Brandon R. Peecook, 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(6): 254-272.

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.

Printrakoon, C., P. D. **Roopnarine** and T. Yeemin, 2018. Ecology of Pinnidae (Mollusca: Bivalvia) from The Gulf of Thailand. *Acta Oceanologica Sinica* https://doi.org/10.1007/s13131-018-1230-4.

2017 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.

2016 **Roopnarine**, P. D., 2016. Ancient food web interactions. *Access Science*, McGraw-Hill Education. http://dx.doi.org/10.1036/1097-8542.YB160510

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 Tëmkin, editors. University of Chicago Press. p. 307-333.

2015 **Roopnarine**, P. D. and K. D. Angielczyk. 2015. Community stability and selective extinction during the Permian-Triassic mass extinction. *Science* 350: 90-93.

Moffitt, S. E., T. M. Hill, P. D. **Roopnarine** and J. P. Kennett. 2015. Response of seafloor ecosystems to abrupt global climate change. *Proceedings of the National Academy of Sciences*. 112: 4684-4689.

2014 **Roopnarine**, P. D. 2014. Humans are apex predators. *Proceedings of the National Academy of Sciences*. doi/10.1073/pnas.1323645111

Rocha L. A. et al. 2014. Specimen collection: An essential tool. *Science*. 344:814-815.

Schreiber, H. A., P. D. **Roopnarine** and S. J. Carlson. 2014. Three-dimensional morphological variability of Recent rhynchonellide brachiopod crura. *Paleobiology*. 40:640-658.

2013 **Roopnarine**, P. D. 2013. Ecology and the Tragedy of the Commons. *Sustainability* 5:749-773.

Roopnarine, P. D. 2013. Omslagpunt voor de aarde (Tipping the Biosphere). In *Meer*!, M. Thieme (ed.). Uitgeverij Jan van Arkel, Netherlands. p. 87-98.

Goodwin, D. H., D. Gillkin and P. **Roopnarine**. 2013. Preliminary evaluation of potential stable isotope and trace element productivity proxies in the oyster *Crassostrea gigas. Palaeogeography, Palaeoclimatology, Palaeoecology*. 373:88-97.

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.

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.

2012 **Roopnarine**, P. D. 2012. Red queen for a day: models of symmetry and selection in paleoecology. *Evolutionary Ecology*. 26:1-10.

Roopnarine, P. D. and K. D. Angielczyk. 2012.The evolutionary palaeoecology of species and the tragedy of the commons. *Biology Letters*. 8:147-150.

Roopnarine, P. D. and R. Hertog. 2012. Detailed food web networks of three Greater Antillean coral reef systems: The Cayman Islands, Cuba and Jamaica. *Dataset Papers in Ecology*. 23, 9 p.

Barnosky, A. et al. 2012. Approaching a state-shift in Earth's biosphere. *Nature*. 486:52-58.

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*. 109:18857-18861.

2011 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.

Mindell DP, Fisher BL, **Roopnarine** P, Eisen J, Mace GM, et al. 2011. Aggregating, Tagging and Integrating Biodiversity Research. *PLoS ONE*. 6: e19491.

2010 **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.

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.

2009 **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.

Bennington, J. B. et al. 2009. Critical Issues of Scale in Paleoecology. *Palaios*. 24: 1-4.

2008 **Roopnarine**, P. D. 2008. Ecological informatics: Catastrophe theory. In Jørgensen, S. E., editor, *Encyclopedia of Ecology*. Elsevier Press. p. 531-536.

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.

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.

Vermeij, G. J., and **Roopnarine**, P. D. 2008. The coming Arctic invasion. *Science*. 321: 780-781.

2007 **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.

2006 **Roopnarine**, P. D. 2006. Extinction cascades and catastrophe in ancient food webs. *Paleobiology*,.32:1–19.

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.

2005 **Roopnarine**, P. D. 2005. The likelihood of stratophenetic-based hypotheses of genealogical succession. *Special Papers in Palaeontology*. 73:143–157.

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.

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.

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.

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.

2004

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.

2003

Roopnarine, P. D. 2003. Analysis of rates of morphologic evolution. *Annual Reviews of Ecology, Evolution, and Systematics*. 34:605–632.

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.

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.

2002

Roopnarine, P. D. 2002. Book review: Evolutionary History of the Bivalvia. *Veliger*.

Roopnarine, P. D. 2002. Empiricism at all levels. "Evolutionary Patterns. Growth, Form, and Tempo in the Fossil Record". *Trends in Ecology and Evolution*. 17:441–442. (Book review).

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.

2001

Roopnarine, P. D. 2001. The description and classification of evolutionary mode in stratophenetic series: A computational approach. *Paleobiology*, 27:446–465.

Roopnarine, P. D. 2001. 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.

Roopnarine, P. D. 2001. 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.

2000

Roopnarine, P. D. 2000. Book review: Bivalves, an eon of evolution. *Veliger*.

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.

Tang, C. M. 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.

1999 **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.

Roopnarine, P. D., Byars, G., and Fitzgerald, P. 1999. Anagenetic evolution, stratophenetic patterns, and random walk models. *Paleobiology*. 25(1):41–57.

1998 **Roopnarine**, P. D. 1998. Translating trees into taxonomy within Veneridae (Bivalvia): A reply to Harte. *Malacologia*, 39(1–2):221–224.

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. *Palaios*. 13:395–400.

1997 **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.

1996 **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.

1995 **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.

1994 **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.

INVITED LECTURES & WORKSHOP LEADERSHIP

2024 Past President's Lecture. Colorado Scientific Society.

Seminar colloquium. Department of Geological Sciences. University of Colorado, Boulder.

Workshop. Analytical approaches to networks, trophic structure, and ancient food webs. 12^{th} North American Paleontological Conference. University of Michigan.

2023 Seminar series. ASPIRE: Adaptive Social, Psychological and Informational Response to Emergencies.

2021 Graduate seminar series. California State University, Los Angeles.

Geobiology seminar series. Union College, New York.

2020 Genomics Social Hour. California Academy of Sciences.

Graduate seminar in Evolutionary Biology. University of California Santa Barbara.

Seminar colloquium. Institute for Biodiversity Science & Sustainability, California Academy of Sciences.

Series in Ecology and Evolutionary Biology. National Museum of Natural History, Rio de Janeiro, Brazil.

2019 Workshop leader, "Stability: Transience, persistence and timescales." Federal Ministry of Education and Research, Berlin, Germany.

Distinguished Speaker, Dept. of Earth and Climate Sciences, San Francisco State University.

Seminar Colloquium, Dept. of Geosciences and Geological and Petroleum Engineering, Missouri Science & Technology University, Rolla, Missouri.

Symposium, "Historical Ecology." 39th meeting of the Association of Marine Laboratories of the Caribbean. Punta Cana, Dominican Republic.

2018 Plenary Speaker, IGCP 630, Wuhan, China.

2017 Plenary Speaker, Fourth International Conference of Geobiology, Wuhan, China.

Seminar Colloquium, Dept. of Geosciences, Miami University of Ohio.

2016 Symposium, "Evolution of the Earth System", Annual Meeting, American Geophysical Union.

K-Pg Working Group, Dept. of Geosciences, University of California, Berkeley.

2015 Keynote Speaker, "Early and Middle Triassic Restructuring Following the End-Permian Mass Extinction", Annual Meeting, Geological Society of America.

Seminar Colloquium, Department of Mathematics and Statistics, Swarthmore College.

2014 Keynote Speaker, "Topics in Paleoecology: Modern Analogues and Ancient Systems", Annual Meeting, Geological Society of America.

International Biogeosciences Conference, Wuhan, China.

2013 K-Pg Food Webs Workshop, University of California, Berkeley.

Seminar Colloquium, Bodega Marine Laboratory, University of California Davis.

Fossil Coffee Series, University of California Museum of Paleontology, University of California, Berkeley.

Bay Area Science Series. Romberg Tiburon Center for Marine Sciences, San Francisco State University.

2012 Keynote Speaker, Centenary Meeting, Paläontologisches Gesellschaft, Museum für Naturkunde, Berlin.

2011 Seminar Colloquium, Paläoontologisches Institut und Museum der Universität Zürich.

Advisory Council Retreat, Gulf of the Farallones National Marine Sanctuary.

Lessons from Deepwater Horizon, American Association of Museums.

2010 Quantitative Paleobiology Symposium, Paleontological Society.

Plenary Speaker, Student Symposium, Annual Meeting of the Western Society of Naturalists.

Seminar Colloquium, Department of Geosciences, University of California Davis.

Seminar Colloquium, Department of Geology, San Jose State University.

Seminar Colloquium, Department of Integrative Biology, University of California, Berkeley.

2009 Plenary speaker, First Bay Area NSF-REU Symposium.

Joint Symposium, California Academy of Sciences and University of California San Francisco.

Fossil Coffee, University of California Museum of Paleontology, University of California, Berkeley.

2008 Climate Change Symposium, Annual Meeting of the California Science Teachers' Association.

2007 Seminar Colloquium, Department of Geology, The Field Museum.

Special Symposium - Environmental Change, Extinction Risk, and the Maintenance of Biodiversity through Time. Annual Meeting Ecological Society of America. San Jose, California.

Hewitt Club Lecture Series, Department of Geology, University of California Riverside.

Paleobiology Seminar, Department of Geological and Environmental Sciences, Stanford University.

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, University of California, Berkeley.

Biology of Extinction, First Okazaki Research Conference, Okazaki Research Institute, Japan.

2003 Seminar Colloquium, Smithsonian Tropical Research Institute, Panama.

Whole Earth Seminar Series, Department of Earth Sciences, University of California Santa Cruz.

Seminar Colloquium, Department of Geosciences, San Francisco State University.

2002 Special Symposium - Systematics & Stratigraphy, ECOS VIII, Toulouse, France.

Seminar Colloquium, Department of Geological Sciences, University of Iowa.

2001 Seminar Colloquium, Department of Integrative Biology, University of California, Berkeley.

2000 Seminar Colloquium, Depaetment of Geology, University of California Davis.

Seminar Colloquium, Department of Geophysical Sciences, University of Chicago.

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

PROFESSIONAL SERVICE

2022-2024 American Geophysical Union Landing Ambassador.

	Associate Editor, *Frontiers in Geology.*
2021-present	Member, Committee on Diversity, Equity and Inclusivity. The Paleontological Society.
2019	Co-organizer and co-leader, Paleo To Policy workshop, Bodega Marine Laboratory, California.
	Co-organizer, Symposium "Evolution, communities and ecosystems: systems approaches to paleoecology", 11th North American Paleontological Conference.
2017-present	External advisor, BioTip program, Federal Ministry of Education and Research, Germany.
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.
	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.
	Contributing Editor, *Paleontologia Electronica*.
2010-2015	Curator, *Biodiversity and Systematic Hub*, PLoS.
	Academic Editor, PLoS One.
2007	Chair, Organizing Committee, CalPaleo Annual Meeting.
2005	President, Western Society of Malacologists.
	Co-Organizer, Annual Meetings of the American Malacological Society and the Western Society of Malacologists.
2004-2014	Biology Representative, Affiliated Institutes, American Association for the Advancement of Science.
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.
2002-2003	Vice-President, SEPM/Society for Sedimentary Geology, Pacific Division.
2002	Roopnarine, P. D. and C. M. Tang, organizers. Symposium: "Evolutionary paleobiology and paleoecology of the Bivalvia". Geological Society of America Annual Meeting.
2001-2003	Schuchert Award Committee, The Paleontological Society.

2001 Organizer, the first Summer Morphometrics Workshop, hosted jointly with Department of Integrative Biology, University of California, Berkeley.

Organizing Committee, Seventh North American Paleontological Confer- ence.

2000-2004 Councilor-At-Large, American Malacological Society.

POST-DOCTORAL SUPERVISION

2021-2024 · Rebecca Wilcox, California Academy of Sciences.

2020-2022 · Roxanne Banker, Providence College, Rhose Island.

2019-2020 · Yuangeng Huang. China University of Geosciences, Wuhan.

2015-2019 · Ashley Dineen. University of California Museum of Paleontology, University of California, Berkeley.

2006-2007 · Kenneth Angielczyk. Department of Geology, The Field Museum.

2003-2005 · Kenneth Angielczyk. Department of Geology, The Field Museum.

2000-2001 · Lindsey Leighton, Department of Geosciences, University of Alberta.

GRADUATE STUDENT ADVISEES

2024-present · Ariel Cheng, M. S. San Francisco State University.

2021-present · Sara Sjosten, Ph.D. University of Exeter, United Kingdom.

2019-present · Tatiana Marrone, M.S. San Francisco State University.

2020 · Courtney Chin, M.S. San Francisco State University.

2020 · Allen Weik. San Francisco State University.

2012 · Cheewarat Printrakoon, M.S. Kasetsart University, Bangkok, Thailand.

2009 · Rachel Hertog, M.S. San Francisco State University.

2004 · Zita Maliga, M.S. San Francisco State University.

1998 · Angie Charles, M.S. Southeast Missouri State University.

1997 · Brent Hopkins. M.S. Southeast Missouri State University.

1997 · Richard Pelikan, M.S. Southeast Missouri State University.

COURSES TAUGHT

California Academy of Sciences
The Nature of Species
Evolution and the Fossil record

San Francisco State University
Historical Geology
History of Life

University of Arizona
Paleontology

Southeast Missouri State University

Biometry; General Zoology; Advanced Topics in Aquatic Invertebrate Zoology; Advanced Topics in Terrestrial Invertebrate Zoology

University of California Davis

Biological Oceanography

PUBLIC SERVICE & OUTREACH

Service

2018-present · Board member, YES, Nature to Neighborhoods, https://www.yesfamilies.org/

Invited Lectures & Events

2023. · Science is a Piece of Cake. A Geology Cake-Off. KQED Live, PBS. https://www.youtube.com/live/ZD5g4B5QIOI?si=fZWU2bIocZLDCXMk

2023. · Earth Day. Astronomers for Earth and Climate HQ, San Francisco State University.

2022. · The Lillienthal Lecture, California Academy of Sciences.

2022. · Burke Museum, University of Washington. https://www.burkemuseum.org/calendar/dino-lecture-last-dinosaurs

2022. · North Carolina Museum of Natural History. https://naturalsciences.org/calendar/event/permian-monsters-lecture-series-rewiring-the-biosphere/

2022. · Members Lecture, California Academy of Sciences. "Resilience and Regeneration of northern Pacific kelp forests: Lessons from an extinct megaherbivore, Steller's sea cow".

2022. · Astronomers for Earth, Climate HQ. http://physics.sfsu.edu/astro4earth/

2021 · SETI Talks. https://youtu.be/3VaaohaNJo8

2020 · The Breakfast Club. California Academy of Sciences.

2020 · Night School. California Academy of Sciences. https://youtu.be/s6CpgGk6I24

2019 · SETI Talks. https://youtu.be/zxss5qUBgmg

2019 · Members Lecture. California Academy of Sciences.

2016 · Science Salon. Many Labs, San Francisco.

2013 · Museum Series. Bohemian Club Summer Gathering, The Bohemian Grove.

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 · Friends of San Pedro Valley, Pacifica, California.

2008 · Lecturer, Filoli Gardens. San Mateo, California.

2006 · The Environmental Alliance. Martinez, California.

2006 · Lecturer, Audubon Canyon Ranch. Point Reyes National Seashore, California.

2005 · Distinguished Speaker Series. California State University East Bay.

2004 · Member's Lecture. California Academy of Sciences.

2001 · Member's Lecture. California Academy of Sciences.

Film & Documentaries

2012 · Cannonball Chemistry. *Mythbusters Television Series*. http://www.imdb.com/title/tt2498690/?ref =nm flmg slf 1

2010 · Call of Life. *Species Alliance*. http://www.imdb.com/title/tt1002965/

Outreach Videos

2020 · The COVID-19 Pandemic: Science for Solutions. https://youtu.be/9-c6bsmYkxE

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$_{I}ntro_{b}y_{D}r_{P}eter_{R}oopnarine$

2010 · Marine food webs and the environment. http://www.leonardo.info/isast/ 2010symposium talks-Roopnarine.html

2010 · Ecosystem Impact of the Deepwater Horizon Disaster.

2010 · Gulf Oil Spill Effects On Wildlife. https://youtu.be/8Uax5FRWnvs

Literature

2023 · Sampson, S. D. and P. D. Roopnarine. 2023. We Need to Think about Conservation on a Different Timescale. Scientific American, October. https://www.scientificamerican.com/article/we-need-to-think-about-conservation-on-a-different-timescale/

2017 · Betting on Conservation. *bioGraphic*. https://www.biographic.com/posts/sto/betting-on-conservation

2006 · Tomorrow is too soon. *California Wild Magazine*.

Blogs

Roopnarine's Food Weblog. https://proopnarine.wordpress.com/

September 23, 2024