

**DAVID A. CARON**

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**Academic Training:**

- 1975 B.S. University of Rhode Island, Microbiology
- 1977 M.S. University of Rhode Island, Oceanography
- 1984 Ph.D. Massachusetts Inst. of Technology and Woods Hole Oceanographic Inst., Joint Program in Biological Oceanography
- 1984-5 Postdoctoral Investigator, Lamont-Doherty Earth Observatory of Columbia University
- 1985-99 Assistant, Associate, Senior Scientist, Woods Hole Oceanographic Inst.
- 1999-pres Professor, University of Southern California

**Awards and Honors:**

- Mary Sears Endowed Chair for Excellence in Biological Oceanography (Woods Hole Oceanographic Institution), 1999
- President, International Society of Protistologists, 2004-2005
- Fellow, American Academy of Microbiology, 2007-present
- University of Southern California Albert S. Raubenheimer Award for Excellence in Teaching, Research and Service, 2010
- Fellow, American Academy for the Advancement of Science, 2010-present
- USC Associates Captain Allan Hancock Endowed Chair in Marine Science, USC, 2017

**Recent Consulting Experience:**

- Consultation for the San Luis Rey Indian Water Authority on mitigation and management of harmful algal blooms in Lake Henshaw, San Diego County.
- Consultation for several Riverside County and Orange County lakes to understand and mitigate fish-killing harmful algal blooms occurring in the lakes.
- Work with Orange County Public Works, City of Orange to understand dramatic drop in water quality in one of their creeks.
- Consultation and laboratory/site studies for regional desalination pilot operations (Carlsbad, West Basin, Long Beach) to characterize algal bloom impact.

- Plankton characterization in Lake Berryessa for the U.S. Department of Interior to determine the community composition of the phytoplankton.
- Studies in Discovery Bay, CA to document nutrient loading and investigate mitigation approaches for toxic cyanobacterial blooms in their ecosystem.
- Numerous small consulting tasks to help private, local and county entities make decisions regarding bloom mitigation and nutrient reduction.
- Studies in coastal harbors in LA County (City of Redondo Beach) and Ventura County (Channel Islands Harbor, City of Oxnard) focused on monitoring, predicting and mitigating harmful algal blooms.

**Relevant Research Experience:**

- Extensive history of extramurally-funded research projects with a strong focus on the occurrence and ecology of marine and freshwater harmful algae and cyanobacteria.
- Principal Investigator on more than 30 research grants totaling more than \$15M.
- Participation in >35 ocean research cruises, numerous freshwater field programs.
- Authorship on ~275 peer-reviewed articles and book chapters.
- Hundreds of oral and poster presentations at scientific meetings and public outreach events.

**Recent Pertinent research endeavors:**

- Study of toxic cyanobacterial blooms in Lake Elsinore and Canyon Lake, Riverside County, CA.
- Deciphering the environmental drivers of toxic cyanobacterial blooms in Clear Lake, Lake County, CA.
- Studies on the retention and passage of natural algal toxins by reverse osmosis desalination operations.
- Monitoring of cyanobacterial species diversity and their toxins in coastal lagoons and estuaries of the Southern California Bight.
- Research projects to monitor toxic algae producing the neurotoxin, domoic acid, in coastal waters along the southern California coast.

**Recent Community Contributions and Leadership:**

- Co-chair of the California Cyanobacteria and Harmful Algal Bloom Network (CCHAB Network) and member of the CCHAB Subcommittee on HAB Mitigation.
- Steering Committee for the California Harmful Algal Bloom Monitoring and Alert Program (HABMAP).
- Executive Steering Committee for the Southern California Coastal Ocean Observing System (SCCOOS).
- Technical Advisory Committee for an Expert Workgroup to Develop a Framework for Monitoring and Assessment of California Freshwater Harmful Algal Blooms (FHABs), for the California State Water Resources Control Board in partnership with the Southern California Coastal Water Research Project (SCCWRP).
- Management Practices Working Group for the Interstate Technology and Regulatory Council (ITRC), charged with Management and Control Strategies for HCBs.

**Relevant Publications:**

- Caron, D.A., A.A.Y. Lie, T. Buckowski, J. Turner, K. Frabotta. 2023. The effect of pH and salinity on the toxicity and growth of the Golden Alga, *Prymnesium parvum*. *Protist*. 174. <https://doi.org/10.1016/j.protis.2022.125927>.
- Howard, M.D.A., J.C. Smith, D.A. Caron, R.M. Kudela, K. Loftin, K. Hayashi, R. Fadness, S. Fricke, J. Kann, M. Roethler, A. Tatters and S. Theroux. 2022. Integrative monitoring strategy for marine and freshwater Harmful Algal Blooms and toxins across the freshwater-to-marine continuum. *Integrated Environmental Assessment and Management*. DOI: 10.1002/ieam.4651.
- Zehr, J.P. and D.A. Caron. 2022. Symbiosis in the ocean microbiome. In: Stahl, L.J. and M.S. Cretoiu (eds.). *The marine microbiome*, 2<sup>nd</sup> Edition, Springer Nature, Switzerland. pp. 535-577.
- Smith, J., D. Shultz, M.D.A. Howard, G. Robertson, V. Phonsiri, V. Renick, D.A. Caron, R.M. Kudela and K. McLaughlin. 2021. Persistent Domoic Acid in Marine Sediments and Benthic Infauna along the Coast of Southern California. *Harmful Algae*. 108: 102103. DOI: <https://doi.org/10.1016/j.hal.2021.102103>.
- Smith, J., D. Shultz, M.D.A. Howard, G. Robertson, V. Phonsiri, V. Renick, D.A. Caron, R.M. Kudela and K. McLaughlin. 2021. Persistent Domoic Acid in Marine Sediments and Benthic Infauna along the Coast of Southern California. *Harmful Algae*. 108: 102103. DOI: <https://doi.org/10.1016/j.hal.2021.102103>.
- Tatters A.O., J. Smith, R.M. Kudela, K. Hayashi, M.D.A. Howard, A.R. Donovan, K.A. Loftin and D.A. Caron. 2021. The tide turns: Episodic and localized cross-contamination of a California coastline with cyanotoxins. *Harmful Algae* 103: 102003. doi:<https://doi.org/10.1016/j.hal.2021.102003>.
- Stauffer, B.A., G.S. Sukhatme and D.A. Caron. 2020. Physical and biogeochemical factors driving spatially heterogeneous phytoplankton blooms in nearshore waters of Santa Monica Bay, USA. *Estuaries and Coasts*. DOI: 10.1007/s12237-020-00704-5.
- Smith, J.C., A. Lie, E.L. Seubert, N. Crowley, G. Robertson and D.A. Caron. 2019. Co-occurring dissolved algal toxins observed at multiple monitoring stations off southern California via Solid Phase Adsorption Toxin Tracking (SPATT). *Toxicon*. 171: 62-65.
- Tatters, A.O., M.D.A. Howard, C. Nagoda, A.B. Fetscher, R.M. Kudela and D.A. Caron. 2019. Heterogeneity of toxin-producing cyanobacteria and cyanotoxins in coastal watersheds of Southern California. *Estuaries and Coasts*. DOI: 10.1007/s12237-019-00546-w.
- Smith, J., P. Connell, R.H. Evans, A.G. Gellene, M.D.A. Howard, B.H. Jones, S. Kaveggia, L. Palmer, A. Schnetzer, B.N. Seegers, E.L. Seubert, A.O. Tatters and D.A. Caron. 2018. A decade and a half of *Pseudo-nitzschia* spp. and domoic acid along the coast of southern California. *Harmful Algae*. 79: 87-104.
- Caron D.A. and S.K. Hu. 2018. Are we overestimating protistan diversity in nature? *Trends in Microbiology*. 27: 197-205.