

DAVID A. CARON

Professor of Biology

USC Associates Captain Allan Hancock Endowed Chair in Marine Science

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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

### **Education and Professional Experience**

1984 - 1985 Associate Research Scientist, Lamont-Doherty Geological Observatory of Columbia University.

1985 - 1989 Assistant Scientist, Woods Hole Oceanographic Institution.

1989 - 1993 Associate Scientist, Woods Hole Oceanographic Institution.

1993 - 1997 Associate Scientist with tenure, WHOI.

1997 - 1999 Senior Scientist, WHOI.

1975 - present Participation on 30 major research cruises.

1975 - present Field research at field stations in Bermuda (BBSR), Jamaica (DBRS), Barbados (BRI), Catalina Island (USC marine station), Caribbean Marine Research Center (LSI, Bahamas).

1999 - present Professor, University of Southern California

2010 - 2011 Interim Director, Wrigley Institute for Environmental Studies

2000 - 2003 Section Head, Marine Environmental Biology Section

2003 - 2006 Chair of the Department of Biological Sciences, USC

### **Recent Awards and Honors**

Mary Sears Endowed Chair for Excellence in Biological Oceanography (Woods Hole Oceanographic Institution), 1999

Seymour Hutner Award (Society of Protozoologists), 2002

President, International Society of Protistologists, 2004-2005

Fellow, American Academy of Microbiology, 2007-present

Albert S. Raubenheimer Award for Excellence in Teaching, Research and Service (University of Southern California), 2010

Fellow, American Academy for the Advancement of Science, 2010-present

Fellow, Simons Collaboration on Ocean Processes and Ecology (Simons Foundation), 2014-present

USC Associates Captain Allan Hancock Endowed Chair in Marine Science, USC, 2017

### **Research Interests**

Marine and freshwater microbial ecology, with emphasis on the life histories and trophic relationships among protists (microalgae including harmful species, and protozoa), and their relationships with other planktonic and benthic microorganisms; emphases on the biogeography, genetics, physiology and biogeochemical significance of protists.

### **Memberships in Professional Societies**

Association for the Sciences of Limnology and Oceanography  
International Society of Protistologists      American Society for Microbiology  
International Society for Microbial Ecology      The Oceanography Society

### **Professional Teaching Experience**

1980      Teaching Assistant, Marine Biological Laboratory.  
1983 - 1984      Visiting Lecturer, Bridgewater State College.  
                    Course: Introductory Oceanography  
1986 - 1999      Visiting Lecturer, Bridgewater State College.  
                    Course: Introductory Oceanography I (physical, chemical  
                    and geological oceanography)  
                    Course: Introductory Oceanography II (biological  
                    oceanography).  
1988-1993      MIT/WHOI Joint Program in Biological Oceanography.  
                    Course: Megacourse in Biological Oceanography.  
1993-1994      MIT/WHOI Joint Program in Biological Oceanography.  
                    Course: Molecular Methods and Approches in Biological  
                    Oceanography.  
1995-1999      MIT/WHOI Joint Program in Biological Oceanography.  
                    Course: Biological Oceanography.  
1996-1999      Visiting Lecturer, University of Massachusetts, Dartmouth.  
                    Course: Biological Oceanography.  
1996      Short course on microbial ecology, Instituto Oceanográfico, University  
                    of São Paulo, São Paulo, Brazil.  
1997      Mini-course on microbial ecology, Universität Rostock, Rostock,  
                    Germany  
1997-1999      Semester in Environmental Science, Microbial Ecology Section, Marine  
                    Biological Laboratory, Woods Hole, MA.  
2000      BISC 373L Biological Oceanography (Catalina Semester)  
                    BISC 581 Seminar in Ecology  
2001      CORE 103 Human Impact on the Blue Planet  
                    BISC 419 Environmental Microbiology  
                    BISC 530 Marine Biology Graduate Seminar  
                    BISC 582 Advanced Biological Oceanography  
                    Mini-course in Plankton Biology (Catalina Island)  
2001 - 2002      BISC 113 Introduction to Biology II  
                    BISC 582 Advanced Biological Oceanography  
2003      BISC 493/494 Undergrad. Biology Honors Seminar and Thesis  
2002 - present      BISC 121 Intro Biology: Organismal and Evolutionary Biology  
2003 - present      BISC 584 Graduate Seminar in Marine Biology  
2003 - present      BISC 585 Scientific Writing: NSF Proposal Reviewing  
2004 - present      BISC 530 Plankton Biology  
2005 - 2006      BISC 455 Molecular Approaches to Microbial Diversity  
2017 - present      BISC 419 Environmental Microbiology  
2017 - present      BISC 493/494 Undergrad. Biology Honors Seminar and Thesis

### **Editorial Advisorship/Reviewer Board Service** (Past & Present)

The ISME Journal (present)  
Journal of Eukaryotic Microbiology (past)  
Limnology & Oceanography (past)  
Aquatic Microbial Ecology (past: Deputy Managing Editor; North America)  
Marine Ecology Progress Series (past)  
Microbial Ecology (past)  
Applied & Environmental Microbiology (past)  
Presently ad hoc reviewer for >20 other journals

### **Participation on National Funding Panels**

NSF - Polar Programs,  
NSF - Biological Oceanography  
NSF - Life in Extreme Environments  
NOAA – Ecology of Harmful Algal Blooms  
NASA – Exobiology

### **Scientific Publications**

- 1 Sieburth, J. McN., P. Willis, K. M. Johnson, C. M. Burney, D. M. Lavoie, K. R. Hinga, D. A. Caron, F. W. French III, P. W. Johnson and P. G. Davis. 1976. Dissolved organic matter and heterotrophic microneuston in the surface microlayers of the North Atlantic. *Science* 194: 1415-1418.
- 2 Davis, P. G., D. A. Caron and J. McN. Sieburth. 1978. Oceanic amoebae from the North Atlantic: culture, distribution, and taxonomy. *Trans. Amer. Micros. Soc.* 97: 73-88.
- 3 Caron, D. A. and J. McN. Sieburth. 1981. Disruption of the primary fouling sequence on fiberglass reinforced plastic submerged in the marine environment. *J. Appl. Environ. Microbiol.* 41: 268-273.
- 4 Caron, D. A. and J. McN. Sieburth. 1981. Response of peritrichous ciliates in fouling communities to seawater-accommodated hydrocarbons. *Trans. Amer. Micros. Soc.* 100: 183-203.
- 5 Bé, A. W. H., D. A. Caron and O. R. Anderson. 1981. Effects of feeding frequency on life processes of the planktonic foraminifer *Globigerinoides sacculifer* (Brady) in laboratory culture. *J. Mar. Biol. Ass. U. K.* 61: 257-277.
- 6 Caron, D. A., A. W. H. Bé and O. R. Anderson. 1982. Effects of variations in light intensity on life processes of the planktonic foraminifer *Globigerinoides sacculifer* in laboratory culture. *J. Mar. Biol. Ass. U. K.* 62: 435-451.
- 7 Caron, D. A., P. G. Davis, L. P. Madin and J. McN. Sieburth. 1982. Enrichment of heterotrophic bacteria and bacterivorous protozoa in oceanic macroaggregates. *Science* 218: 795-796.

- 8 Bé, A. W. H., O. R. Anderson, W. W. Faber, Jr. and D. A. Caron. 1983. Sequence of morphological and cytological changes during gametogenesis in the planktonic foraminifer *Globigerinoides sacculifer* (Brady). *Micropaleontol.* 29: 310-325.
- 9 Caron, D. A. 1983. A technique for the enumeration of photosynthetic and heterotrophic nanoplankton using epifluorescence microscopy, and a comparison with other procedures. *Appl. Environ. Microbiol.* 46: 491-498.
- 10 Caron, D. A. and A. W. H. Bé. 1984. Predicted and observed feeding rates of the spinose planktonic foraminifer *Globigerinoides sacculifer*. *Bull. Mar. Sci.* 35: 1-10.
- 11 Davis, P. G., D. A. Caron, P. W. Johnson and J. McN. Sieburth. 1985. Phototrophic and apochlorotic components of the picoplankton and nanoplankton in the North Atlantic: geographic, vertical, seasonal and diel distributions. *Mar. Ecol. Prog. Ser.* 21: 15-26.
- 12 Caron, D. A. F. R. Pick and D. R. S. Lean. 1985. Chroococcoid cyanobacteria in Lake Ontario: vertical and seasonal distributions during 1982. *J. Phycol.* 21: 171-175.
- 13 Goldman, J. C., D. A. Caron, O. K. Andersen and M. R. Dennett. 1985. Nutrient cycling in a microflagellate food chain: I. Nitrogen dynamics. *Mar. Ecol. Prog. Ser.* 24: 231-242.
- 14 Caron, D. A., J. C. Goldman, O. K. Andersen and M. R. Dennett. 1985. Nutrient cycling in a microflagellate food chain: II. Population dynamics and carbon cycling. *Mar. Ecol. Prog. Ser.* 24: 243-254.
- 15 Goldman, J. C. and D. A. Caron. 1985. Experimental studies on an omnivorous microflagellate: implications for grazing and nutrient regeneration in the marine microbial food chain. *Deep-Sea Res.* 32: 899-915.
- 16 Alldredge, A. L., J. J. Cole and D. A. Caron. 1986. Production of bacteria inhabiting macroscopic organic aggregates (marine snow) from surface waters. *Limnol. Oceanogr.* 31: 68-78.
- 17 Caron, D. A., P. G. Davis, L. P. Madin and J. McN. Sieburth. 1986. Enrichment of microbial populations in macroaggregates (marine snow) from surface waters of the North Atlantic. *J. Mar. Res.* 44: 543-565.
- 18 Andersen, O. K., J. C. Goldman, D. A. Caron and M. R. Dennett. 1986. Nutrient cycling in a microflagellate food chain. III. Phosphorus dynamics. *Mar. Ecol. Prog. Ser.* 31: 47-55.
- 19 Caron, D. A., J. C. Goldman and M. R. Dennett. 1986. Effect of temperature on growth, respiration and nutrient regeneration by an omnivorous microflagellate. *Appl. Environ. Microbiol.* 52: 1340-1347.

- 20 Wiebe, P. H., E. H. Backus, P. H. Backus, D. A. Caron, P. M. Glibert, J. F. Grassle, K. Powers and J. B. Waterbury. 1987. Biological Oceanography. *In*: Milliman, J. D. and W. Wright (eds.). *The marine environment of the U.S. Atlantic Continental Slope and Rise*. Jones and Bartlett Publ., Inc. Boston, pp. 140-201.
- 21 Caron, D. A. 1987. Grazing of attached bacteria by heterotrophic microflagellates. *Microb. Ecol.* 13: 203-218.
- 22 Caron, D. A., W. W. Faber, Jr. and A. W. H. Bé. 1987. Effects of temperature and salinity on the growth and survival of the planktonic foraminifer *Globigerinoides sacculifer*. *J. Mar. Biol. Ass. U. K.* 67: 323-341.
- 23 Caron, D. A., W. W. Faber, Jr. and A. W. H. Bé. 1987. Growth of the spinose planktonic foraminifer *Orbulina universa* in laboratory culture and the effect of temperature on life processes. *J. Mar. Biol. Ass. U. K.* 67: 343-358.
- 24 Sieracki, M. E., L. W. Haas, D. A. Caron and E. J. Lessard. 1987. The effect of fixation on particle retention by microflagellates: underestimation of grazing rates. *Mar. Ecol. Prog. Ser.* 38: 251-258.
- 25 Goldman, J. C., D. A. Caron and M. R. Dennett. 1987. Nutrient cycling in a microflagellate food chain: IV. Phytoplankton-microflagellate interactions. *Mar. Ecol. Prog. Ser.* 38: 75-87.
- 26 Goldman, J. C., D. A. Caron and M. R. Dennett. 1987. Regulation of gross growth efficiency and ammonium regeneration in bacteria by substrate C:N ratio. *Limnol. Oceanogr.* 32: 1239-1252.
- 27 Pick, F. R. and D. A. Caron. 1987. Pico- and nanoplankton biomass in Lake Ontario: relative contribution of phototrophic and heterotrophic assemblages. *Can. J. Fish. Aquat. Sci.* 44: 2164-2172.
- 28 Caron, D. A., J. C. Goldman and M. R. Dennett. 1988. Experimental demonstration of the roles of bacteria and bacterivorous protozoa in plankton nutrient cycles. *Hydrobiologia* 159: 27-40.
- 29 Caron, D. A. and J. C. Goldman. 1988. Dynamics of protistan carbon and nutrient cycling. *J. Protozool.* 35: 247-249.
- 30 Faber, W. W., Jr., O. R. Anderson, J. L. Lindsey and D. A. Caron. 1988. Algal-foraminiferal symbiosis in the planktonic foraminifer *Globigerinella aequilateralis*: I. Stability of association and morphological differences between two endosymbiotic species. *J. Foram. Res.* 18: 334-343.

- 31 Glibert, P. M., M. R. Dennett and D. A. Caron. 1988. Carbon and nitrogen uptake and  $\text{NH}_4^+$  regeneration by pelagic microplankton and marine snow from the North Atlantic. *J. Mar. Res.* 46: 837-852.
- 32 Faber, W. W., Jr., D. A. Caron and O. R. Anderson. 1989. Algal-foraminiferal symbiosis in the planktonic foraminifer *Globigerinella aequilateralis*: II. Effects of two symbiont species on foraminiferal growth and longevity. *J. Foram. Res.* 19: 185-193.
- 33 Caron, D. A., P. G. Davis and J. McN. Sieburth. 1989. Factors responsible for the differences in cultural estimates and direct microscopical counts of populations of bacterivorous microflagellates. *Microb. Ecol.* 18: 89-104.
- 34 Caron, D. A., L. P. Madin and J. J. Cole. 1989. Composition and degradation of salp fecal pellets: implications for vertical flux in oceanic environments. *J. Mar. Res.* 47: 829-850.
- 35 Caron, D. A., E. L. Lim, H. Kunze, E. M. Coper and D. M. Anderson. 1989. Trophic interactions between nano- and microzooplankton and the "Brown Tide". *In: Coper, E. M., V. M. Bricelj and E. J. Carpenter (eds.). Novel phytoplankton blooms: causes and impacts of recurrent brown tides and other unusual blooms*, Springer-Verlag, Berlin, pp. 265-294.
- 36 Caron, D. A., J. C. Goldman and M. R. Dennett. 1990. Carbon utilization by the omnivorous flagellate *Paraphysomonas imperforata*. *Limnol. Oceanogr.* 35: 192-201.
- 37 Sanders, R. W., K. G. Porter and D. A. Caron. 1990. Relationship between phototrophy and phagotrophy in the mixotrophic chrysophyte *Poterioochromonas malhamensis*. *Microb. Ecol.* 19: 97-109.
- 38 Lewitus, A. J. and D. A. Caron. 1990. The relative effects of nitrogen or phosphorus depletion, and light intensity on the pigmentation, chemical composition, and volume of *Pyremononas salina*. *Mar. Ecol. Prog. Ser.* 61: 171-181.
- 39 Caron, D. A., K. G. Porter and R. W. Sanders. 1990. Carbon, nitrogen and phosphorus budgets for the mixotrophic phytoflagellate *Poterioochromonas malhamensis* (Chrysophyceae) during bacterial ingestion. *Limnol. Oceanogr.* 35: 433-443.
- 40 Caron, D. A. and J. C. Goldman. 1990. Nutrient regeneration. *In: Capriulo, G.M. (ed.). Ecology of marine protozoa*. Oxford Univ. Press, New York, pp. 283-306.
- 41 Caron, D. A., J. C. Goldman and T. Fenchel. 1990. Protozoan respiration and metabolism. *In: Capriulo, G.M. (ed.). Ecology of marine protozoa*. Oxford Univ. Press, New York, pp. 307-322.

- 42 Caron, D. A., O. R. Anderson, J. L. Lindsey, W. W. Faber, Jr. and E. L. Lim. 1990. Effects of gametogenesis on test structure and dissolution of some spinose planktonic foraminifera and implications for test preservation. *Mar. Micropaleontol.* 16: 93-116.
- 43 Caron, D. A. 1990. Growth of two species of bacterivorous microflagellates in batch and continuous culture, and implications for their planktonic existence. *Mar. Microb. Food Webs.* 4: 143-159.
- 44 Caron, D. A. 1990. Evolving role of protozoa in aquatic nutrient cycles. *In: Reid, P.C., C.M. Turley and P.H. Burkill. Protozoa and their role in marine processes*, NATO Advanced Study Institute Series, Springer-Verlag, Berlin, p. 387-415.
- 45 Caron, D. A. and N. R. Swanberg. 1990. The ecology of planktonic sarcodines. *Rev. Aq. Sci.* 3: 147-180.
- 46 Swanberg, N.R. and D.A. Caron. 1991. Patterns of sarcodine feeding in epipelagic oceanic plankton. *J. Plankton Res.* 13: 287-312.
- 47 Caron, D.A. 1991. Heterotrophic flagellates associated with sedimenting detritus. *In: Patterson, D.J. and J. Larsen. The biology of free-living heterotrophic flagellates.* Systematics Association Special Volume No. 43, Clarendon Press, Oxford, pp. 77-92.
- 48 Berninger, U.-G., D.A. Caron, B.J. Findlay and R.W. Sanders. 1991. Flagellates of planktonic communities, their communities and methods of study. *In: Patterson, D.J. and J. Larsen. The biology of free-living heterotrophic flagellates.* Systematics Association Special Volume No. 43, Clarendon Press, Oxford, pp. 39-56.
- 49 Lewitus. A.J. and D.A. Caron. 1991. Physiological responses of phytoflagellates to dissolved organic substrate additions. 1. Dominant role of heterotrophic nutrition in *Poterioochromonas malhamensis* (Chrysophyceae). *Plant Cell Physiol.* 32: 671-680.
- 50 Caron, D.A., E.L. Lim, G. Miceli, J.B. Waterbury and F.W. Valois. 1991. Grazing and utilization of chroococcoid cyanobacteria and heterotrophic bacteria by protozoa in laboratory cultures and a coastal plankton community. *Mar. Ecol. Prog. Ser.* 76: 205-217.
- 51 Lewitus. A.J., D.A. Caron and K.R. Miller. 1991. Effects of light and glycerol on the organization of the photosynthetic apparatus in the facultative heterotroph *Pyrenomonas salina* (Cryptophyceae). *J. Phycol.* 27: 578-587.
- 52 Lewitus. A.J. and D.A. Caron. 1991. Physiological responses of phytoflagellates to dissolved organic substrate additions. 2. Dominant role of autotrophic nutrition in *Pyrenomonas salina* (Cryptophyceae). *Plant Cell Physiol.* 32: 791-801.
- 53 Marrasé, C., E.L. Lim and D.A. Caron. 1992. Seasonal and daily changes in bacterivory in a coastal plankton community. *Mar. Ecol. Progr. Ser.* 82: 281-289.

- 54 Sanders, R.W., D.A. Caron and U.-G. Berninger. 1992. Relationships between bacteria and heterotrophic nanoplankton in marine and fresh waters: an inter-ecosystem comparison. *Mar. Ecol. Prog. Ser.* 86: 1-14.
- 55 Caron, D.A. An introduction to biological oceanography. 1992. *Oceanus* 35: 10-17.
- 56 Berninger, U.-G., D.A. Caron and R.W. Sanders. 1992. Mixotrophic algae in three ice-covered lakes of the Pocono Mountains, USA. *Freshwater Biology* 28: 263-272.
- 57 Caron, D.A., R. W. Sanders, E.L. Lim, C. Marrasé, L. A. Amaral, S. Whitney, R.B. Aoki and K.G. Porter. 1993. Light-dependent phagotrophy in the freshwater mixotrophic chrysophyte *Dinobryon cylindricum*. *Microb. Ecol.* 25: 93-111.
- 58 Caron, D.A. and J.C. Goldman. 1993. Predicting excretion rates of protozoa: reply to the comment by Landry. *Limnol. Oceanogr.* 38: 472-474.
- 59 Lim, E.L., L.A. Amaral, D.A. Caron and E.F. DeLong. 1993. Application of ribosomal RNA-based probes for observing marine nanoplanktonic protists. *Appl. Environ. Microbiol.* 59: 1647-1655.
- 60 Caron, D.A. 1993. Enrichment, isolation and culture of free-living heterotrophic flagellates. In: Kemp, P., E.B. Sherr, B.F. Sherr and J.J. Cole. *Handbook of methods in aquatic microbial ecology*, Lewis Publishers, Boca Raton, pp. 77-89.
- 61 Sherr, E.B., D.A. Caron and B.F. Sherr. 1993. Staining of heterotrophic protists for visualization via epifluorescence microscopy. In: Kemp, P., E.B. Sherr, B.F. Sherr and J.J. Cole. *Handbook of methods in aquatic microbial ecology*, Lewis Publishers, pp. 213-227.
- 62 Kiddon, J., M.Bender, J. Orchardo, J. Goldman, D.A. Caron and M.R. Dennett. 1993. Isotopic fractionation of oxygen by respiring marine organisms. *Global Biogeochem. Cycles.* 7: 679-694.
- 63 Caron, D.A., E.J. Lessard, M. Voytek and M.R. Dennett. 1993. Use of tritiated thymidine (Tdr) to estimate rates of bacterivory: implications of label retention and release by bacterivores. *Mar. Microb. Food Webs.* 7: 177-196.
- 64 Caron, D. A. 1994. Protozoan links in food webs. In: Hausmann, K., Hülsmann, N. *Progress in protozoology. Proceedings of the IX International Congress of Protozoology, Berlin 1993.* Gustav Fischer Verlag, Stuttgart, pp. 125-130.
- 65 Caron, D.A. 1994. Inorganic nutrients, bacteria and the microbial loop. *Microb. Ecol.* 28: 295-298



- 66 Caron, D.A., A.F. Michaels, N.R. Swanberg and F.A. Howse. 1995. Primary productivity of symbiont-bearing planktonic sarcodines (Acantharia, Radiolaria, Foraminifera) in surface waters near Bermuda. *J. Plankton Res.* 17: 103-129.
- 67 Michaels, A.F., D.A. Caron, N.R. Swanberg, F.A. Howse and C.M. Michaels. 1995. Planktonic sarcodines (Acantharia, Radiolaria, Foraminifera) in surface waters near Bermuda: abundance, biomass and vertical flux. *J. Plankton Res.* 17: 131-163.
- 68 Arenovski, A.L., E.L. Lim and D.A. Caron. 1995. Mixotrophic nanoplankton in oligotrophic surface waters of the Sargasso Sea may employ phagotrophy to obtain major nutrients. *J. Plankton Res.* 17: 801-820.
- 69 Caron, D.A., H.G. Dam, P. Kremer, E.J. Lessard, L.P. Madin, T.C. Malone, J.M. Napp, E.R. Peele, M.R. Roman and M.J. Youngbluth. 1995. The contribution of microorganisms to particulate carbon and nitrogen in surface waters of the Sargasso Sea near Bermuda. *Deep-Sea Res.* 42: 943-972.
- 70 Roman, M.R., D.A. Caron, P. Kremer, E.J. Lessard, L.P. Madin, T.C. Malone, J.M. Napp, E.R. Peele and M.J. Youngbluth. 1995. Spatial and temporal changes in the partitioning of organic carbon in the plankton community of the Sargasso Sea off Bermuda. *Deep-Sea Res.* 42: 973-992.
- 71 Caron, D.A. and R.J. Gast. 1995. Probing biodiversity: molecular techniques offer powerful new tools. *Oceanus.* 38: 11-15.
- 72 Caron, D.A. 1996. Symposium introductory remarks: protistan molecular ecology and systematics. *J. Euk. Microbiol.* 43: 87-88.
- 73 Lim, E.L., D.A. Caron and E.F. DeLong. 1996. Development and field application of a quantitative method for examining natural assemblages of protists using oligonucleotide probes. *Appl. Environ. Microbiol.* 62: 1416-1423.
- 74 Barbeau, K., J.W. Moffett, D.A. Caron, P.L. Croot and D.L. Erdner. 1996. Role of protozoan grazing in relieving iron limitation of phytoplankton. *Nature.* 380: 61-64.
- 75 Murzov, S.A. and D.A. Caron. 1996. Sporadic high abundances of naked amoebae in the Black Sea plankton. *Aq. Microb. Ecol.* 11: 181-191
- 76 Gast, R.J. and D.A. Caron. 1996. Molecular phylogeny of symbiotic dinoflagellates from planktonic foraminifera and radiolaria. *Mol. Biol. Evol.* 13: 1192-1197.
- 77 Caron, D.A. Protistan community structure. In: Hurst, C.J., Knudsen, G.R., McInerney, M.J., Stetzenbach, L.D. and M.V. Walter (eds.). 1997. *Manual of Environmental Microbiology, Section IV*, ASM Press, Washington, D.C., pp. 284-294.

- 78 Amaral Zettler, L., M.L. Sogin, D.A. Caron. 1997. Phylogenetic relationships between the Acantharea and the Polycystinea: a molecular perspective on Haeckel's Radiolaria. *Proc. Nat. Acad. Sci, USA.* 94: 11411-11416.
- 79 Caron, D.A., D.J. Lonsdale and M.R. Dennett. 1997. Bacterivory and herbivory play key roles in fate of Ross Sea production. *Antarctic J. U.S.* 32: 81-83.
- 80 Amaral Zettler, L.A., O.R. Anderson and D.A. Caron. 1998. Insights on the diversity within a "species" of *Thalassicolla* (Spumellarida) based on 16S-like ribosomal RNA gene sequencing. *J. Euk. Microbiol.* 45: 488-496.
- 81 Campbell, L., M.R. Landry, J. Constantinou, H.A. Nolla, S.L. Brown, H. Liu and D.A. Caron. 1998. Response of microbial community structure to environmental forcing in the Arabian Sea. *Deep-Sea Res.* 45: 2301-2325.
- 82 Lim, E.L., D.A. Caron and M.R. Dennett. 1999. The ecology of *Paraphysomonas imperforata* based on studies employing oligonucleotide probe identification in coastal water samples and enrichment cultures. *Limnol. Oceanogr.* 44: 37-51.
- 83 Caron, D.A., E.R. Peele, E.L. Lim and M.R. Dennett. 1999. Picoplankton and nanoplankton and their trophic relationships in surface waters of the Sargasso Sea south of Bermuda. *Limnol. Oceanogr.* 44: 259-272.
- 84 Amaral Zettler, L.A., O.R. Anderson and D.A. Caron. 1999. Towards a molecular phylogeny of colonial Spumellarian Radiolaria. *Mar. Micropaleontol.* 36: 67-79.
- 85 Dennett, M.R., D.A. Caron, S. Mursov, I.G. Polikarpov, N.A. Gavrilova, L.V. Georgieva and L.V. Kuzmenko. 1999. Abundance and biomass of nano- and microplankton assemblages during the 1995 Northeast Monsoon and Spring Intermonsoon in the Arabian Sea. *Deep-Sea Res.* 46: 1691-1717.
- 86 Caron, D.A. and M.R. Dennett. 1999. Phytoplankton growth and mortality during the 1995 Northeast Monsoon and Spring Intermonsoon in the Arabian Sea. *Deep-Sea Res.* 46: 1665-1690.
- 87 Caron, D.A., E.L. Lim, M.R. Dennett, R.J. Gast, C. Kosman and E.F. DeLong. 1999. Molecular phylogenetic analysis of the heterotrophic chrysophyte genus *Paraphysomonas*, and the design of rRNA-targeted oligonucleotide probes for two species. *J. Phycol.* 35: 824-837.
- 88 Caron, D.A., R.J. Gast, E.L. Lim and M.R. Dennett. 1999. Protistan community structure: molecular approaches for answering ecological questions. *Hydrobiologia.* 401: 215-227.

- 89 Gifford, D.J. and D.A. Caron. 1999. Sampling, preservation, enumeration and biomass of marine protozooplankton. In: *ICES zooplankton methodology manual*. Academic Press, London, pp. 193-221.
- 90 Gast, R.J., T.A. McDonnell and D.A. Caron. 1999. srDNA-based taxonomic affinities of algal symbionts from a planktonic foraminifer and a solitary radiolarian. *J. Phycol.* 36: 172-177.
- 91 Sanders, R.W., U.-G. Berninger, E.L. Lim, P.F. Kemp and D.A. Caron. 2000. Heterotrophic and mixotrophic nanoplankton predation on picoplankton in the Sargasso Sea and on Georges Bank. *Mar. Ecol. Prog. Ser.* 192: 103-118.
- 92 Caron, D.A. 2000. Symbiosis and mixotrophy among pelagic microorganisms. In: Kirchman, D.L. (Ed.), *Microbial ecology of the oceans*, John Wiley & Sons, Inc., New York, pp. 495-523.
- 93 Amaral Zettler, L.A. and D.A. Caron. 2000. New insights into the phylogeny of Acantharea based on SSU rRNA gene sequencing. *European J. Protistol.* 36: 34-39.
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