

Position Description:

The Marine and Environmental Biology Section within the Department of Biological Sciences at the University of Southern California invites applications for a postdoctoral investigator under the direction of Prof. David A. Caron (<https://dornsife.usc.edu/labs/caron/>). The successful candidate will participate in research programs examining the diversity, ecology and physiology of single-celled eukaryotic microbes (protists). The broad research focus of the laboratory is to advance our understanding of the role of phototrophic and heterotrophic eukaryotic microbes in freshwater and marine food webs and biogeochemical cycles. Emphases within the laboratory include: studies of protistan diversity and community composition; the responsiveness of protistan assemblages and planktonic food webs to environmental change (natural and anthropogenic); studies of mixotrophic protistan species (those that combine phototrophic and heterotrophic nutrition in a single cell), protistan symbioses, and the ecological significance of those life styles to carbon and energy flow. Studies of harmful algae and cyanobacteria in marine and fresh waters are also a component of the lab's research efforts, and are aimed at characterizing toxic events and the factors stimulating them. The candidate will interact as a part of a large collaborative research group supported by the Simons Foundation (SCOPE) whose research setting is the oceanic ecosystem north of the Hawaiian Islands in the North Pacific Subtropical Gyre (<https://www.simonsfoundation.org/life-sciences/microbial-oceanography/simons-collaboration-on-ocean-processes-and-ecology/>; <http://scope.soest.hawaii.edu/>).

Applicants with interest in the following topics are particularly encouraged:

- Design and implementation of experimental studies of microbial food web structure and function (growth rates, trophic activities) and general ecology of protists.
- Establishment and culture of phototrophic and heterotrophic protists.
- Traditional (microscopy-based) and genetic (gene sequencing) approaches for assessing and studying protistan biodiversity and biogeography.
- Protistan genomic/transcriptomic approaches for elucidating the physiological responses of protists to changing environmental conditions.

Requirements:

- Ph.D. in aquatic science, molecular biology, microbial ecology or a related field.
- Problem-solving skills and independence.
- Strong written and verbal communication skills.
- The ability to work as part of a team.

Recommended skills/experience:

- Bioinformatics approaches to applying and exploiting sequence data to advance our understanding of protistan physiology and ecology.
- Proficiency in statistical analysis and data visualization with R programming language or similar bioinformatic software/language (ie. Matlab, Python).
- Traditional (microscopy-based) and genetic (gene sequencing) approaches for assessing and studying protistan biodiversity, biogeography and gene expression.
- Flow cytometry and immunological techniques such as ELISAs.

Interested applicants should submit a cover letter describing the reason for their interest and fit to the position requirements, their CV, and names and contact information of three references to dcaron@usc.edu

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