

Cryptic seaweed: Distribution, photobiology and lifecycle of *Pyropia nereocystis*

Pyropia nereocystis is a red alga (seaweed) found along the coast of Central California. It is an obligate epiphyte that grows on another type of algae called bull kelp. Larger *P. nereocystis* are found higher up on bull kelp (closer to the surface of the ocean) and their size decreases as depth increases. This project aims to determine the factors that control this vertical zonation, such as settlement processes linked with host-epiphyte interactions or abiotic photo-biological limitations.

Six different field sites will be sampled once every two months. During site visits, field surveys (algal community and environmental measurements) will be conducted and algae and invertebrate samples will be collected. Additionally, settlement plates will be deployed and monitored. *P. nereocystis* will be cultured in the lab for experiments and measurements of oxygen evolution and photochemical efficiency.

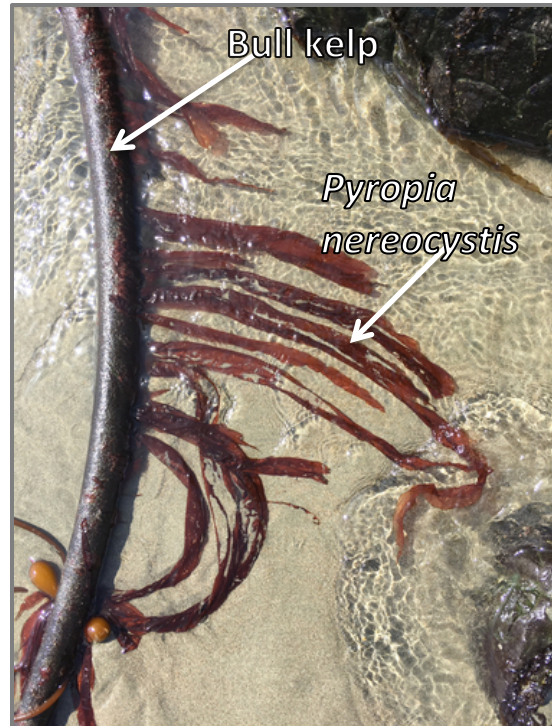


Photo taken by Gena Bentall and used with permission.

As an undergraduate student assistant for this project, you will get to assist with:

- Snorkeling to complete field surveys
 - In situ measurements using calipers, measuring tape, underwater slates, and other tools
 - Algal and invertebrate collections from the field
 - Deployment and monitoring of transplants/settlement plates
 - CTD casts
 - In situ irradiance measurements
- Algal culturing in the laboratory
 - Mixing/replacing culturing media
 - Maintaining distinct cultures
 - Measuring growth rates
 - Measuring oxygen evolution
 - Measuring photochemical efficiency using fluorometry
 - Identification of features via microscope
- Controlled settlement experiments and data analysis
- Algal cross-sections by hand and examination under microscope

You will need to be willing and able to do:

- Be in the water (in a wetsuit or drysuit) for up to four (4) hours
- Be on a boat
- Get dirty
- Carry up to 30 lbs
- Work up to eight (8) hours in a single day (infrequently, not required on a regular basis)
- Start early in the day (infrequently, not required on a regular basis)
- Look through a microscope for up to one (1) hour at a time

Things you will learn/be exposed to:

- The scientific method
- Basic ecology
- Natural history of subtidal organisms
- Scientific diving/snorkeling
- Experimental design principles
- Statistical analysis methods
- Algal species identification and culturing methods
- Microscopy

It would be great if you have:

- A wetsuit (or access to one)
- Interest in ecology or algae
- Patience!