## GENERAL INFORMATION

**Program sponsor:** Princeton Environmental Institute  
**Position number:** C1SAR3  
**Project title:** Phytoplankton Bloom Dynamics below Antarctic Sea-Ice  
**Organization/research group:** Program in Atmospheric and Oceanic Sciences  
**Primary location(s) of internship:** Princeton University, Sayre Hall  
**Additional cities and/or countries to be visited (if applicable):** n/a

### Note:
If this internship is located in a country with an International SOS risk rating of High or Extreme, final candidates must participate in a travel review process overseen by the Travel Oversight Group (TOG), and obtain safety guidance prior to departure. The University reserves the right to revoke support and funding for travel at any time there has been a significant deterioration in the safety and security conditions surrounding travel arrangements, or in the sector of the country, or countries, where travel is to occur.

## FACULTY SPONSOR(s)/HOST INFORMATION

**Name(s):** Prof. Jorge L. Sarmiento  
**University Department(s):** Geosciences, AOS  
**E-mail:** jls@princeton.edu  
**Phone:** 609-258-6585  
**Website:**  
https://www.princeton.edu/geosciences/people/display_person.xml?netid=jls&display=Faculty

## INTERNSHIP/RESEARCH PROJECT INFORMATION

**Internship/project description:**  
The Southern Ocean Carbon and Climate Observations and Modeling (SOCCOM) program has deployed over a 100 biogeochemical floats in the Southern Ocean, with the aim of studying the marine carbon cycle in this region. Some of these floats are trapped under ice during austral winter, recording changes in chlorophyll, particulate organic carbon, oxygen and nutrients. The goal of this project is to assess changes in phytoplankton biomass and derived biogeochemical fluxes under ice, with the purpose of understanding the physical and ecological drivers of phytoplankton bloom and accumulation under Antarctic sea-ice.

### Student's role and responsibilities:
- Analysis of profiling float data deployed by the SOCCOM program.  
- Potential analysis of ocean color and lidar satellite data  
- Study of phytoplankton dynamics and its impact of biogeochemical fluxes, and in particular the carbon cycle  
- Participation in internal talks and seminars on marine biogeochemistry  
- Use of numerical data analysis software
**Internship/project learning objectives:**
At the end of the internship, the student should be able to describe the environmental factors driving phytoplankton blooms, their impact on biogeochemical cycles, and provide new insights on the development of these processes under Antarctic sea-ice.

**PROGRAM REQUIREMENTS**

**Academic background and any course pre-requisites:**
Academic background on oceanography and biology is preferable but not necessary

**Technical skills:**
The student should be comfortable with advanced programming and large data analysis (or willing to learn)

**Additional training(s):**
n/a

**Equipment:**
n/a

**Physical demands:**
n/a

**Language abilities/competencies (if applicable):** n/a

**Additional information about the internship/project:**
n/a

**INTERNATIONAL TRAVEL REQUIREMENTS** (if applicable)

<table>
<thead>
<tr>
<th>Visa(s) required?</th>
<th>Research permit/pass required?</th>
<th>Immunizations required?</th>
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<tbody>
<tr>
<td>Yes  ☐</td>
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<td>No  ☑</td>
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**INTERNSHIP/PROJECT SUPERVISOR(S)**

**Name and title of primary supervisor:** Dr. Lionel Arteaga

**Email:** laaq@princeton.edu  
**Phone:** (609) 258-1318

**Name and title of additional supervisor, if applicable:** n/a

**E-mail:**  
**Phone:**

**PROGRAM DATES AND FUNDING INFORMATION**

<table>
<thead>
<tr>
<th>Weekly Stipend: $500</th>
<th>Number of Positions Available: 1</th>
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<tbody>
<tr>
<td>Tentative Start Date (mm/dd/yyyy): 06/03/2019</td>
<td>Number of Weeks: 8</td>
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<tr>
<td>Tentative End Date (mm/dd/yyyy): 08/02/2019</td>
<td>Note: PEI funding is for full-time work, 35 hours per week minimum, and for a period of at least 8 continuous weeks.</td>
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**Application deadline:** January 11, 2019