**GENERAL INFORMATION**

**Program sponsor:** Princeton Environmental Institute  
**Position number:** U1DEI1  
**Project title:** Relationship between Aerosol Concentration and Sea State in Remote Marine Environments  
**Organization/research group:** Deike Lab  
**Primary location(s) of internship:** Princeton University, EQUAD D309  
**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):** Luc Deike  
**University Department(s):** Mechanical and Aerospace Engineering and Princeton Environmental Institute  
**E-mail:** ldeike@princeton.edu  
**Website:** ldeike.princeton.edu  
**Phone:** 8582638128

**INTERNSHIP/RESEARCH PROJECT INFORMATION**

**Internship/project description:**

Knowledge of the size production flux of primary ocean spray aerosol particles and its dependence on meteorological and environmental variables is necessary for modeling cloud microphysical properties and the influence of aerosol on radiative processes. In remote marine environments, where perturbations by anthropogenic aerosols is limited, sea spray aerosols affect the radiative balance and becomes the main source of cloud condensation nuclei, having an even stronger influence on clouds. Biases and uncertainties in predicting aerosols, and associated clouds in these remote region where sea spray aerosol impact is the greatest are related to a lack of fundamental understanding in the production processes of aerosols and directly impacts our ability to perform weather prediction and earth system modeling.

**Student's role and responsibilities:**

The intern will analyze observational data sets of sea spray aerosols distribution and concentration collected from previous field campaigns supported by the Department of Energy, and trace back the observed sea spray aerosols size distribution and concentration to the production mechanism at the ocean surface through analysis of wave statistics modeling (WAVEWATCHIII). We will combine different data sets on sea spray aerosols, in the Eastern North Atlantic, in the North Pacific, and in the Southern Ocean. The wind and ocean-wave conditions, corresponding to the various campaigns, will be recovered by analyzing wave modeling outputs in the corresponding location.
Internship/project learning objectives:
The student will analyze complex data sets from field campaign and numerical modeling.

PROGRAM REQUIREMENTS

Academic background and any course pre-requisites:
one required

Technical skills:
one

Additional training(s):
one

Equipment:
one

Physical demands:
one

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

Additional information about the internship/project:
none

INTERNATIONAL TRAVEL REQUIREMENTS (if applicable)

Visa(s) required? Yes No

Research permit/pass required? Yes No

Immunizations required? Yes No

INTERNSHIP/PROJECT SUPERVISOR(S)

Name and title of primary supervisor: Luc Deike
Email: ldeike@princeton.edu
Phone:

Name and title of additional supervisor, if applicable: n/a
E-mail: Phone:

PROGRAM DATES AND FUNDING INFORMATION

Weekly Stipend: $500

Number of Positions Available: 1

Tentative Start Date (mm/dd/yyyy): 06/01/2019

Number of Weeks: 8

Tentative End Date (mm/dd/yyyy): 07/30/2019

Note: PEI funding is for full-time work, 35 hours per week minimum, and for a period of at least 8 continuous weeks.

Application Deadline: January 11, 2019