**GENERAL INFORMATION**

<table>
<thead>
<tr>
<th>Program sponsor:</th>
<th>Princeton Environmental Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position number:</td>
<td>U1IRV</td>
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<tr>
<td>Project title:</td>
<td>GuyotPhysics</td>
</tr>
<tr>
<td>Organization/research group:</td>
<td>Irving and Simons Group</td>
</tr>
<tr>
<td>Primary location(s) of internship:</td>
<td>Princeton University, Guyot Hall</td>
</tr>
<tr>
<td>Additional cities and/or countries to be visited (if applicable):</td>
<td>n/a</td>
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</tbody>
</table>

**Note:** If this internship is located in a country with an [International SOS](https://www.international-sos.com) 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. Jessica C. E. Irving & Prof. Frederik J. Simons |
| University Department(s): | Geosciences, Princeton Environmental Institute |
| E-mail: | jirving@princeton.edu |
| Phone: | (609) 258-2598 |
| Website: | http://guyotphysics.net/ |

**INTERNSHIP/RESEARCH PROJECT INFORMATION**

**Internship/project description:**

GuyotPhysics is an ongoing initiative to understand the environment of Princeton and beyond, using seismic and geodetic data. Parts of the project are sponsored by PEI's Urban Grand Challenge; it is based in the Department of Geosciences. The state-of-the-art equipment available to the interns working on GuyotPhysics projects include a broadband seismic station based in Guyot Hall, a new seismic station to be commissioned during the project, a continuously recording geodetic station, and a weather station. Furthermore, there are data and metadata from 18 acoustic monitoring instruments deployed in the oceanic environment.

PEI summer interns will look for signatures of anthropogenic and other activity in Princeton's urban environment and beyond (from the geophysical signature of Reunions to any regional seismic signals due to economic resource exploitation). Students will also work to find and understand signals related to the climate (for example atmospheric, seasonal and storm signals such as tropical cyclones) and global processes (tectonic effects, tides, whole Earth oscillations).

**Student's role and responsibilities:**

There are four different internships available, one working with existing seismic data, one working with the new seismometer, one focused on the geodetic and weather data, and one targeting the ocean environment. We will work with interested candidates to develop their projects to match their interests, and to build the skill set required to make their GuyotPhysical problem into an exciting summer experience, leading them to research independence.

The work required is computational data analysis: the interns will interpret the geophysical data gathered as well as develop code and geophysical techniques. Interns will be based in an accessible office environment in Guyot Hall. If (when!) the projects generate interesting results students will be encouraged to present them at a suitable conference (for example the American Geophysical Union Fall Meeting or a more specialized meeting, such as a UNAVCO, SSA, or IRIS conference).
Internship/project learning objectives:
Student will gain research independence and familiarity with computational data analysis in a Linux-based computer environment. They will work with highly sophisticated state-of-the-art research geophysical instrumentation, and develop analytical and scientific reporting skills.

PROGRAM REQUIREMENTS

Academic background and any course pre-requisites:
Experience with one computer language would be very helpful. No specific classes are required.

Technical skills:
See above

Additional training(s):
None

Equipment:
None needed

Physical demands:
None

Language abilities/competencies [if applicable]:

Additional information about the internship/project:
Do contact us for additional questions, and/or to alums of our internship program (their names are on the web page).

INTERNATIONAL TRAVEL REQUIREMENTS [if applicable]

Visa[s] required? Yes [ ] No [ ]
Research permit/pass required? Yes [ ] No [ ]
Immunizations required? Yes [ ] No [ ]

INTERNERSHIP/PROJECT SUPERVISOR(S)

Name and title of primary supervisors: Prof. Jessica C. E. Irving & Prof. Frederik J. Simons
Email: see above
Phone: see above

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

E-mail: Phone:

PROGRAM DATES AND FUNDING INFORMATION

Weekly Stipend: $500

Tentative Start Date (mm/dd/yyyy): June 2019
Number of Positions Available: 4
Number of Weeks: 8-10

Tentative End Date (mm/dd/yyyy): July/August 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