

The **NASA Goddard Institute for Space Studies (GISS)** has a new spring internship opportunity to contribute to mentor led research under the guidance of a NASA scientist! We are recruiting undergraduate students to participate in the opportunity: **“Tradeoffs Between Resilience and Redundancy in the Global Food System”** under the mentorship of NASA GISS Scientist, Dr. Michael Puma.

Interns will receive **\$9,600** for the 2017 spring semester and will work full time for a period of 15-16 weeks. All application materials (*including transcripts and letters of recommendation*) must be submitted by **Monday, October 17<sup>th</sup>**.

Please review the **announcement, eligibility requirements, and application instructions below** for additional details.

**Announcement Details:**

**Opportunity Title:** Tradeoffs Between Resilience and Redundancy in the Global Food System

**Dr. Michael Puma’s Biography:** <http://science.gsfc.nasa.gov/sed/bio/michael.j.puma>

**Dates of Internship:** January 9, 2017 – April 28, 2017

**Deliverables:** The undergraduate intern awarded this opportunity must produce a publishable research paper, scientific poster, and PowerPoint summarizing the project.

**Opportunity Description/Objective (specific student assignment):**

Our global food system is vulnerable to climate extremes, including severe droughts, floods, heat waves and cold spells. It is well understood that climate change will potentially magnify this vulnerability through changes in the frequency, intensity, and duration of these extreme, all of which can affect crop production. However, a new source of susceptibility has emerged as trade flows, interconnectivity, and homogeneity have increased within the global food system. On the surface, globalization of our food system balances supply and demand across different regions, provides protection against regional disturbances, and leads to a more efficient global system. However, evidence is emerging that the high interdependency and homogeneity within the system also leaves it susceptible to catastrophic disruptions.

The student will explore the idea that the vitality of our global food system depends on an optimal balance of efficiency and resilience. Working with global food trade data and food balance sheet data, the student will conduct various network analyses (see, for example, Barabasi’s 2016 book <http://barabasi.com/networksciencebook/> for the type of work to be done). **This work will involve significant time coding in Python.** The ultimate goal is to link the insights gained from network analysis of the global food system with NASA remotely sensed data to improve global food security.

**Expected opportunity outcome (i.e. research, final report, poster presentation, etc.):**

The expected outcome is an analysis of the global food trade network and, depending upon results, a final report summarizing the findings. Interns must produce a publishable scientific research paper, develop a scientific poster and also create a PowerPoint presentation to present to the GISS scientific community.

**Student's Computer and/or Special Skills:**

The student should be very comfortable coding in Python and working with large datasets.

**Eligibility Requirements**

- US Citizen
- 3.0 GPA
- Currently enrolled in an accredited undergraduate program
- Must reside within a 50 mile radius of GISS in NYC

**Application Instructions:**

1. Go to <https://intern.nasa.gov/ossi/web/public/main/>
2. Click on "Student Login/Registration" on the upper left tab of the banner to sign in and create a profile.
3. Complete your general application by clicking on the "My Applications" tab and completing **ALL** sections. The system will state that the opportunity is "closed" until all sections have been completed.
- **Letters of recommendations and transcripts must be uploaded** for your application to be considered complete.
- You also must complete the *Terms of Acceptance* agreement.
4. After completing your general application, you must select the opportunity of interest at GISS. To view the opportunities online, click the "*Search Opportunities*" tab.
5. From the *Center/Site Name* dropdown, select "**Goddard Institute for Space Studies (2880 Broadway, NY)**".
6. Then, from the *Session* dropdown menu, select "**Spring 2017**" and click the **Search** button.
7. You will then see the research opportunity at our NYC office titled: "**Tradeoffs between resilience and redundancy in the global food system**".
8. Click on *View/Apply* to submit your general application to GISS and **complete the opportunity-specific essay**.
9. Ensure that your general application is completed in its **entirety (including uploading transcripts and letters or recommendation)** prior to applying to the opportunity.

**Please be advised that submitting a request for a letter of recommendation is not sufficient to complete your application. The letter of recommendation and the transcripts must be submitted prior to applying for the opportunity.**

Thank you for your consideration in applying for a NASA internship at the NASA Goddard Institute for Space Studies. If you have any questions regarding this opportunity, please contact Matthew Pearce at the information provided below.

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