NASA Science Mission Directorate
Space Grant Internships for the summer of 2015

** You must apply through the ASGC Program Office (or your state’s Space Grant)
** Student must be a US Citizen to apply
** Individual Space Grants will submit names and application materials for students interested in applying for these internships. Application materials should include:

1) Resume
2) Summary of skills relevant to the position in which you are applying
3) A brief statement of why you are interested in that particular internship

** The Space Grant is then committing to providing the funding for the internship if the student is selected.
** If selected, the funding amount is $6,000

**Internship Position Descriptions:**

**Chandra X-Ray Observatory**
The Chandra program seeks a few talented individuals to assist in engineering analysis and software tool development for the Chandra Flight Operations Team.

**Position Summary:**
Chandra interns will assist the Northrop Grumman Flight Operations Team in analysis and software development in support of the Chandra X-ray Observatory mission. Chandra was launched in 1999 and is the third of NASA’s Great Observatories. Interns will work side-by-side with Northrop engineers at the Chandra Operations Control Center in Cambridge MA. Work will include analysis of spacecraft data and/or development of software tools and web utilities to be used in operations of the vehicle.

**Required Skills:**
Required skills vary by project, however, all candidates must have a basic education in physics, mathematics, computer science or engineering. As time and skill-sets allow, Chandra interns may be able to work on more than one of the projects listed.

**Possible Projects Include:**

**Generating Mobile Friendly Web Pages for Access to Engineering Data**
The selected candidate will work with spacecraft operators and engineers to identify portions of the existing Chandra Operations internal website that need improved accessibility from mobile platforms. He/she will then work with the local software development team to implement mobile friendly interfaces to the selected data. Candidates must have experience creating web pages using HTML/CSS. Experience optimizing web pages for mobile devices is a plus.

**Testing Support for Upgraded Telemetry Analysis and Distribution System**
The Chandra Flight Operations software team has developed a significant upgrade to the system used to process, analyze, and distribute spacecraft data. The new system provides access to spacecraft data from a variety of platforms. The successful candidate will work side-by-side with spacecraft engineers and operators to validate the new system by designing and executing formal test cases.

**Telemetry Tool/Web Page Development**
The Chandra Flight Operations software team has developed a significant upgrade to the system used to process, analyze, and distribute spacecraft data. The new system provides access to spacecraft data from a variety of platforms. The successful candidate will work side-by-side with spacecraft engineers and operators to design and implement tools and/or web pages that take advantage of the new system capabilities to
improve the accessibility of spacecraft data and/or the flow of operations for Chandra. Candidates must have experience either programming with Python, MATLAB, or Java, or creating web pages with HTML/CSS/JavaScript.

**Documentation and Usability**
The successful candidate will work with Chandra on-console operators and engineers to generate or update procedures, data displays, and reference materials and to enhance the access to and usability of available spacecraft and operations information. Candidates must have demonstrated strengths in technical writing, and past experience with basic website design and development.

**Space Telescope Science Institute**

**NASA Mission:** Hubble Space Telescope

**Internship Location:** Space Telescope Science Institute, Baltimore, MD

**Mentor:** Dr. Frank Summers

**Summary of the work to be done:** Intern will assist Dr. Summers and other team members in creating scientific visualizations of Hubble images and other astronomical data sets. Our group creates video sequences for use in Hubble press releases, websites, education, planetariums, television, and film. The ideal intern will become part of a small, tightly-knit team and be employed at the stage(s) of the production pipeline most suited to their skill set. Tasks may include image processing using Photoshop/Gimp, video production using After Effects, 3D modeling and rendering using Maya, and visualization, scientific, and/or astronomical programming using a variety of languages like C, MEL, perl/python, IRAF, etc. This internship provides a special opportunity to combine scientific, computational, and artistic skills into a project with tangible, high impact results.

**Necessary skills:**
One of the following:

--Computer graphics production experience
--Experience with Autodesk Maya 3D modeling and animation
--Experience with Adobe After Effects video production
--Demonstrated computer programming experience in C, perl, python, MEL, IRAF, FITS, or other astronomy/scientific/visualization languages
--Computer experience in a Mac OS X environment.
--Strong organizational skills and the ability to work independently.
--Good communications skills.

**Desirable skills:**
--Combination of multiple skills as outlined above
--Astronomy/Physics degree or coursework
--Experience in public outreach of astronomy topics