



**The NC Space Grant/
J. Donald Cline Astronomy Scholarship**

Application for 2010-2011

<http://www.ncspacegrant.org/fs/cline>

Application Deadline: February 25, 2010

Expected Award Date: April 15, 2010

The NC Space Grant/J. Donald Cline Astronomy Scholarship

The NC Space Grant/J. Donald Cline Astronomy Scholarship is open to current 2009-2010 undergraduate students who will be of junior or senior standing during the 2010-2011 academic year, are US citizens, and are enrolled in a degree program in the astronomical or related sciences at one of the NC Space Grant eleven member institutions.

The NC Space Grant/J. Donald Cline Astronomy Scholar will receive an academic year award of \$5,000, plus a \$5,000 stipend to conduct summer research at the Pisgah Astronomical Research Institute (PARI). Travel related to the scholarship activities will be covered by the NC Space Grant/J. Donald Cline Scholarship.

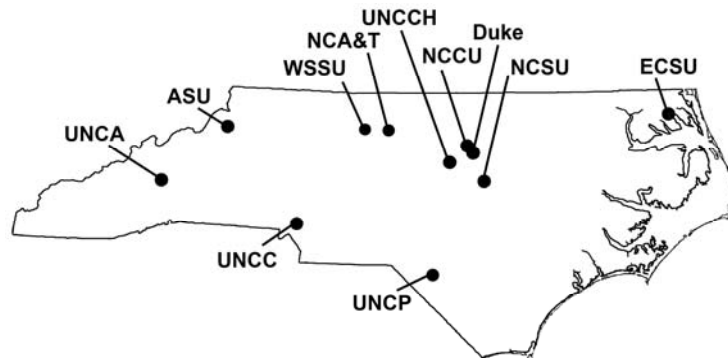
NC Space Grant

NC Space Grant, established in 1991, is an active member of the National Space Grant College and Fellowship Program. NC Space Grant currently has 11 university member institutions and 8 industry/government/non-profit partners, and has managed and provided nearly \$14 million in support to North Carolina citizens.

NC Space Grant conducts programs in areas of fellowships, scholarships, education, research, and public service to promote, develop and support aeronautics and space-related science, engineering and technology training and programs. A common focus is to involve women, underrepresented minorities, and persons with disabilities, and to reach more citizens of North Carolina.

NC Space Grant Member Universities

Appalachian State University
Duke University
Elizabeth City State University
NC A&T University
NC Central University
NC State University
UNC Asheville
UNC Chapel Hill
UNC Charlotte
UNC Pembroke
Winston-Salem State University



Future Workforce Need

Statistical data point to a pending critical shortage of scientists, engineers, and technicians in the aerospace field. Half of NASA's 18,000 employees are in science and engineering jobs and most of these employees are older than 40. Similar trends exist in the aero/space industry. These demographics will lead inexorably to thousands of vacant positions in the coming years, which are unacceptable in the context of NASA's bold vision for space exploration and is counterproductive to the growth of the aero/space economy in our nation.

Behind the looming shortage is the decline in science and engineering education. The math and science performance of U.S. 12th graders continues to rank near the bottom internationally. Fewer science and engineering (S&E) students are earning undergraduate degrees and fewer

U.S. citizens are receiving graduate degrees. Of those that do earn doctoral degrees in S&E at U.S. universities, roughly 40% are citizens of other countries who often return to their native countries or are not allowed to work on sensitive defense programs.

The NC Space Grant / J. Donald Cline Astronomy Scholarship Purpose

In order to meet the increasing demand for a highly-skilled aero/space workforce, the NC Space Grant/J. Donald Cline Astronomy Scholarship was established in 2007 to provide support for undergraduate students pursuing a degree in the astronomical or related sciences at a NC Space Grant member university. Examples of related degrees include programs that study, but are not limited to, optical and radio astronomy, instrumentation engineering, robotics, data imaging and visualization. The scholarship will also give the student an opportunity to engage in hands-on research at PARI in western North Carolina.

Mr. J. Donald Cline, founder and president of PARI, is an engineer and successful businessman who understands the value of technology in the American enterprise. He has a strong interest in attracting young people to careers in science and a lifelong commitment to providing opportunities for students to learn and grow. PARI is a highly unusual place that affords young people the opportunity to learn science by doing science. This “hands-on” learning literally takes science out of the classroom and into the realm of the imagination. To underscore Mr. Cline’s commitment to this approach, the Cline Scholarship includes two components: the formal university program of study and the experiential “hands-on” learning opportunity at PARI. The student must supply the passion, excitement and commitment to expand this learning opportunity beyond the bounds of a typical college experience. The NC Space Grant/J. Donald Cline Scholarship will provide the means for the student to be successful.

The Pisgah Astronomical Research Institute

Established in September 1998, PARI is a not-for-profit foundation dedicated to education and research in radio and optical astronomy and the related disciplines of physics, math, engineering, environmental studies, chemistry and computer science.

The PARI site was initially developed by NASA in 1962 as one of the first facilities to track satellites and monitor manned space flights. Located in the half-million acre Pisgah Forest about 30 miles southwest of Asheville, North Carolina, the PARI campus is a well-protected site for astronomy and should remain so for generations to come.

Scientific instruments at PARI include: two 26 meter (85ft) radio telescopes, a 12.2 meter (40ft) radio telescope housed in a radome, a 4.6 meter (15ft) radio telescope (dubbed “Smiley” and operated remotely by high school students), a high frequency Jupiter-Io/Solar antenna, eight optical telescopes on the PARI Optical Ridge, three weather and atmospheric monitoring stations, and various environmental monitoring instruments.

PARI fills a niche in observational astronomy by supporting long-term survey, monitoring and target of opportunity programs for visiting scientists. The programs may take advantage of existing infrastructure and instruments at PARI, or instruments may be added by researchers. Internet access is available across the 200-acre campus, so experiments may be controlled remotely. Labs, offices, and housing are available. Visiting scientists may stay for a semester on the PARI campus, may schedule periodic visits, or operate their experiments remotely. Visiting scientists may be individuals, postdoctoral researchers, or members of a consortium or observing campaign.

Application Selection & Process

The NC Space Grant/J. Donald Cline Astronomy Scholarship is open to current 2009-2010 undergraduate students who will be of junior or senior standing during the 2010-2011 academic year, and are enrolled in a degree program in the astronomical or related sciences at one of the NC Space Grant eleven member institutions.

Each applicant must submit an online Cline Scholarship application form, which can be found at www.ncspacegrant.org/fs/cline, by February 25, 2010. Applicants will be screened and interviewed by a review committee. The review committee will examine a number of criteria including academic achievement and honors, essay content, extracurricular activities, and references.

Local screening and interviews will be completed by March 2010. The Cline Scholar will be announced by April 15, 2010

Recipient Requirements and Expectations

The NC Space Grant/J. Donald Cline Astronomy Scholarship recipient will be required to maintain a minimum cumulative 3.0 cumulative grade point average (GPA) during the 2010-2011 academic year. The recipient must also maintain a major or minor plan of study in astronomy or related science.

The Cline Scholar will be required to spend approximately 8 weeks during the summer conducting hands-on research with on-site scientists at PARI prior to the 2010-2011 academic year (summer 2010). Additionally, the Cline Scholar will be required to present his/her research at the 2010 State of North Carolina Undergraduate Research and Creativity Symposium (SNCURCS) and at the 2011 meeting (winter or spring session) of the American Astronomical Society (AAS). All travel expenses will be paid by the NC Space Grant/J. Donald Cline Scholarship.

To ensure that all scholarship requirements are met, the Cline Scholar will be required to sign an acceptance letter. If the Scholar defaults on this award, he/she will be responsible for the repayment of the allocated funds in full.

College Costs

The NC Space Grant/J. Donald Cline Astronomy Scholarship recipient will receive an academic year award of \$5,000 and a stipend of \$5,000 for 8 weeks of summer research at PARI.

The Cline Scholarship award will be managed through the financial aid office at the Scholar's institution and will be used to cover tuition, room and board, and other fees; the summer research stipend will be administered by PARI. Cline Scholars will be responsible for all costs which exceed the Cline Scholarship. Funds will be disbursed at the beginning of each semester, but only after the Scholar's grades and credit hours have been verified by the NC Space Grant staff. Funds will be disbursed bi-weekly during the 10 week summer term.

Information regarding specific costs at each campus may be obtained from the admissions office at each institution.

Frequently Asked Questions

Q: What are the eligibility requirements?

Any student may apply as long as they meet the following requirements:

- Sophomore or junior standing in the 2010-2011 academic year;
- US citizen;
- GPA of 3.0 or higher;
- Enrolled as a full-time student;
- Major or minor in astronomical or related sciences. Examples of related degrees include programs that involve, but are not limited to, optical and radio astronomy, instrumentation engineering, robotics, data imaging and visualization, and computer science;
- Attend one of the NC Space Grant member institutions.

Q: If I am selected as a Cline Scholar, what are my obligations?

The Scholar's responsibilities are to:

- Accept the scholarship offer and sign an acceptance letter.
- Enroll as a full-time student at a NC Space Grant member institution.
- Maintain a minimum 3.0 cumulative grade point average on work attempted each semester throughout the junior and senior years of academic study.
- Major or minor in astronomy or related program throughout academic study.
- Participate in summer research at PARI for one summer.
- Travel to and participate in the State of NC Undergraduate Research and Creativity Symposium and an American Astronomical Society meeting.

Q: Will I be guaranteed a job when I graduate?

No, but with the increasing shortage of professionals in science, technology, engineering, and math related fields, there will be a strong demand for a highly skilled workforce.

Q: What would happen if I decided to transfer to another college?

You may remain a Cline Scholar as long as you transfer to another institution that is a member of the NC Space Grant consortium. If you decide to transfer to an institution that is not a NC Space Grant institution and/or change your major during academic study, you will be required to repay any amount of the scholarship which you have received to that date.

Contact Information

Questions regarding this announcement should be directed to Dr. Chris Brown, Director, or Jobi Cook, Associate Director, of the NC Space Grant at scholarships@ncspacegrant.org or (919) 515-5933.