

The Tennessee Space Grant Consortium
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Affiliate Members: Austin Peay State University, East Tennessee State University, Fisk University, Middle Tennessee State University, Oak Ridge Associated Universities, Rhodes College, Tennessee Education Association, Tennessee State University, Tennessee Technological University, University of Memphis, University of Tennessee at Chattanooga, University of Tennessee at Knoxville, University of Tennessee Space Institute

Program Description: The National Space Grant College and Fellowship Program consists of 52 state-based, university-led Space Grant Consortia in each of the 50 states, plus the District of Columbia and the Commonwealth of Puerto Rico. Annually, each consortium receives funds to develop and implement student fellowships and scholarships programs; interdisciplinary space-related research infrastructure, education, and public service programs; and cooperative initiatives with industry, research laboratories, and state, local, and other governments. Space Grant operates at the intersection of NASA's interest as implemented by alignment with the Mission Directorates and the states' interests. Although it is primarily a higher education program, Space Grant programs encompass the entire length of the education pipeline, including elementary/secondary and informal education. The Tennessee Consortium is a Designated Consortium funded at a level of \$590,000 for fiscal year 2007.

Program Relevance to NASA: Space Grant Consortia build human capital and research expertise to support NASA programs and missions, expand NASA's expertise and educational networks, and bring knowledge and awareness of space to a broad range of constituents in every state. Our affiliate member, the University of Tennessee at Knoxville, for example, sponsors an astronomy program that reaches literally thousands of Tennessee residents. Paul Lewis, our Space Science "guru," goes to the roof of the Physics building each clear night for telescope viewing sessions, open to the public. He also travels to schools, parks and organizations throughout mostly rural east Tennessee, spreading his message about the wonders of space and NASA. This work brings awareness of and interest in NASA and its functions to many, many people in Tennessee.

Another way we support NASA programs and missions is by funding undergraduate and graduate student participation in various NASA summer programs. We have been sending students to the highly selective NASA Academy programs for many years. In the past few years, we have also included newer internship opportunities at JPL and additional programs at LRC and GSFC. We have never received anything less than exceptionally positive feedback from all participants. These experiences have educated the participants about NASA and its many career opportunities. Most of our students have gone on to further education and employment in the STEM workforce, particularly at NASA and in NASA-related fields.

Program Benefits to the State: In addition to providing a benefit to NASA, the Tennessee Space Grant Consortium has also conferred measurable benefits to the State of Tennessee. Our support of the Adventure Science Center in Nashville has allowed many schoolchildren and their teachers and families to experience the learning opportunities that the Science Center offers. This sparks their interest in all things science, encouraging them to continue their learning in these areas.

We also fund supplemental workshops for preservice math and science teaching students at the University of Tennessee at Chattanooga. These education students learn different and exciting way to bring a love of learning mathematics into their future classrooms. This benefits both these students and their future students in Tennessee K-12 classrooms.

Similarly, we sponsor a statewide conference at Middle Tennessee State University that focuses on math and science education research. The knowledge gained at this conference benefits teachers and their students throughout Tennessee

Program Goals: Our goals as a Consortium are in line with those of NASA and the National Space Grant College and Fellowship Program as a whole. We aim to promote education about space and all of STEM at all levels throughout Tennessee. We strive to provide an educated workforce for NASA and all related fields that will benefit our state, NASA and, ultimately, our nation as a whole.

Program Accomplishments: We are proud of our programmatic accomplishments during the past grant year. Our Fellowship and Scholarship Program continues to thrive at both the undergraduate and graduate levels. Students we support go on to pursue further degrees in STEM areas, leading to employment in many STEM fields. We have students participating in various exciting research projects with their professors. Tennessee students attend prestigious summer programs at NASA Centers and participate in NASA competitions such as the Annual Great Moonbuggy Race and the University Student Launch Initiative (USLI). We work with both K-12 teachers and future teachers, helping them to learn innovative methods to teach STEM areas to their students in meaningful ways. We have many programs, both new and old, that provide great benefit to both the people in our state and to NASA.

Student Accomplishments: Our Space Grant Fellows have achieved notable and admirable accomplishments over the years. During the past grant year, for example, we have been pleased with the progress of Bryan Gaither, a student at Austin Peay State University. Bryan is a native of Clarksville, Tennessee, where Austin Peay is located. He is a Physics major, and is currently a Senior. Bryan was accepted into the NASA Goddard Space Flight Centers Robotics Internship Program in the summer of 2005. His work there went so well that he has been back for both the summers of 2006 and 2007. Bryan's work in this area has resulted in a patent application in conjunction with his mentors at GSFC. Additionally, he has brought his work back to Austin Peay, where he is continuing his research with several faculty members. We look forward to tracking Bryan's further progress through the educational system and eventually into the STEM workforce.

Chase Cox will be graduating with a B.S. in Physics from Austin Peay State

University in May, 2008. During the past grant year, Chase worked with faculty at Austin Peay on a research project involving a search for variable stars and transient objects in large astronomical databases. This work has piqued Chase's interest in further research. For the coming Fall semester, he has been accepted and will be enrolling in graduate school in Mechanical Engineering at Vanderbilt University.

Similarly, an undergraduate student at East Tennessee State University was supported in 2007-08. He received training and experience in acquiring observations and in data reduction and analysis, all involving extensive computational applications. This student was also supported during the prior grant year. Participation in this Space Grant project was relevant to the student's acceptance into a National Science Foundation sponsored Research Experience for Undergraduates program during summer 2007. He is currently applying to graduate programs in Physics with the intent of enrolling in such a program in fall 2008. The student will graduate with a BS in Physics with Honors in Discipline in May 2008.