FASST: Fisk Astronomy and Space Science Training Program

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Program Overview

What is FASST?
FASST is a training program in astronomy and space science for Fisk undergraduate and graduate students.
FASST aims to increase the representation of minorities in astronomy and other space-science related disciplines.
FASST addresses all aspects of the science education pipeline—from K-12 to undergraduate to Masters to PhD—with seamless transitions and careful mentoring by both Fisk and Vanderbilt faculty.

Collaborators:
Summer internships and leveraged partnerships with researchers at:
• Lawrence Livermore National Laboratory (LLNL)
• University of Wisconsin and Yale University
• Harvard-Smithsonian Center for Astrophysics
• NASA Goddard (Gamma Ray and Cosmic Ray Astrophysics Branch)
• NASA Marshall (National Space Science and Technology Center)

Research Thrust

Research activities are centered around:
• NASA OSS themes: Astronomical Search for Origins (Origins) and Structure and Evolution of the Universe (SEU)
• Fisk’s existing strengths in instrumentation and high-energy detector development
• Astronomical research through a new joint Fisk-Vanderbilt membership in the SMARTS telescope consortium at the Cerro Tololo Inter-American Observatory (CTIO) in Chile

Origins Research
Fisk faculty and students will collaborate with researchers at Vanderbilt University and in the SMARTS telescope consortium in investigations of:

Star-formation and related research, focusing on synoptic photometric observations of young stars and modeling of stellar angular momentum evolution

SEU Research
Participate in planning and upcoming NASA missions related to high-energy phenomena such as gamma-ray bursts (GRBs), supernovae, and black holes.
Fisk is a participant in the EXIST - Energetic X-ray Imaging Survey Telescope mission (Harvard – lead institution)

Education Thrust

New Course Development
• Joint faculty appointments with Vanderbilt to develop a new Concentration in Astrophysics within Fisk physics major
• Three new courses support student involvement in both Origins and SEU research:
  - Introductory space-science course
  - Introductory calculus-based astrophysics course
  - Topical course in high-energy astrophysics

NASA Space Science Scholars
Provides minority undergraduates with financial support, mentorship, professional development, research experience, and summer internship opportunities

Fisk-Vanderbilt Joint MS-PhD Program
This program allows students to transition from the Masters degree program at Fisk University into the PhD program at Vanderbilt. Students whose undergraduate backgrounds in physics may not be complete, but who are otherwise qualified, may use this program as an alternative path to the PhD. One or two years of Masters level coursework, coupled with research experience, help to complete the student’s preparation for PhD level work.

Outreach Thrust

Scopes for Schools NASA Roadshow
• Close partnership with Vanderbilt University’s historic Dyer Observatory
• A traveling resource that will bring the excitement of space science to schools and community groups across Tennessee
• Centerpiece items: Portable Planetarium and telescopes
• Activities include teacher professional development and curriculum development