SUCCESSFUL SUMMER CAREER DEVELOPMENT PROGRAMS IN SPACE LIFE SCIENCES WITH A NATIONAL EXPOSURE

R.L. McNeel¹, A.S. Hackler², and W.A. Thomson³

¹Baylor College of Medicine rmcneel@bcm.edu, ²National Space Biomedical Research Institute hackler@bcm.edu, and ³Baylor College of Medicine wthomson@bcm.edu

The mission of the National Space Biomedical Research Institute (NSBRI) Career Development program is to provide intensive research opportunities for the next generation of space biomedical scientists, engineers and physicians, and translate and transfer knowledge about space biomedical research to the scientific community, the general public and other stakeholders.

Two NSBRI programs that work to accomplish this mission are the Summer Apprenticeship (SA) program and the Summer Bioastronautics Institute (SBI).

SUMMER APPRENTICESHIP (SA) PROGRAM

This program aims to create excitement for and interest in space life sciences as a career. The SA program is one of the premier space-related summer programs with hundreds of applications each year targeting academically talented and motivated undergraduate, graduate, veterinary, or medical students from institutions across the country enabling them to join ongoing space biomedical research projects at selected NASA research centers and utilize their educational backgrounds and specific skill sets to assist in ongoing research projects. Since 1998, 194 students have participated in the program. The FY13 applicant pool represented 37 different majors from 101 educational institutions across 34 states with 19% of the applicants from Top 25 US Institutions. The goal is for the research conducted by each apprentice to result in a regional or national abstract/presentation, white paper, technical publication or update, or a manuscript that includes the apprentice as a contributing author. This program has also established some unique student/mentor continuation partnerships. In response to follow-up evaluations of participants between the program years of 1998-2011, the percentage of undergraduates who moved on to advanced education in NASA-related disciplines and STEM was 73%. For this same reporting period, 80% are pursuing a STEM-related career. These data provide evidence that these programs are supporting access to STEM-based careers.

SUMMER BIOASTRONAUTICS INSTITUTE (SBI)

NSBRI Career Development program also organizes a week-long SBI just prior to the SA program research projects. The SBI offers participants growth opportunities in academics and space life sciences through a variety of career development and scientific presentations, discussions, and hands-on activities. Participants include apprentices to the SA program, NSBRI First Award postdoctoral fellows, NSBRI Mentored Research fellows from Texas A&M University and Massachusetts Institute of Technology, apprentices from the NSBRI/Tohoku University Exchange program, and research fellows from the Morehouse School of Medicine Summer Research program. Academic presentations focus on effective mentoring skills as a researcher, effective research presentations and slide design, workplace ethics, improving interpersonal skill and communication, grant writing, effective CV content and organization, and outreach possibilities to the general public and other stakeholders. The scientific presentations vary each year with the FY13 topics focused on space radiation, the future of space life science and space exploration, smart medical systems for long-term space flight, vestibular illusions and space flight, and biomedical effects and considerations of human spaceflight. Invited speakers are selected from NASA, NSBRI, Baylor College of Medicine, and other premier institutions across the country. The SBI is designed to increase social interaction and collaboration, and to encourage a networking community that will grow into future collaborations as those attending pursue their careers. The SBI is a valuable link between NSBRI and many of our nation’s universities and institutions.

This poster will highlight accomplishments and significant outcomes of the SA and SBI programs.