

THE HARVARD-MIT PHD PROGRAM IN BIOASTRONAUTICS¹Laurence R. Young⁽¹⁾, Alan Natapoff⁽²⁾, and Julie Greenberg⁽³⁾⁽¹⁾ *Massachusetts Institute of Technology, Room 37-219, Cambridge, Massachusetts 02139*Email: ly@mit.edu⁽²⁾ *Massachusetts Institute of Technology, Room 37-219, Cambridge, Massachusetts 02139*Email: natapoff@mit.edu⁽³⁾ *Harvard-MIT Division of Health Sciences and Technology, Institute of Medical Engineering and Science, Room E25-518, Cambridge, Massachusetts 02139*Email: jgreenbe@mit.edu**ABSTRACT**

The National Space Biomedical Research Institute (NSBRI)¹ supports a PhD program offered by the Harvard-MIT Division of Health Sciences and Technology (HST) under the Institute of Medical Engineering and Science (IMES), with a specialization in Bioastronautics². The program prepares future leaders in space life sciences to meet the challenges of protecting humans in the hostile space environment, to deal with the scientific issues of gravitational biology, and to make creative use of human presence in space for research and exploration. This educational offering is a part of HST's Medical Engineering and Medical Physics (MEMP) program, HST-IMES's framework for granting the PhD degree. HST-MEMP provides broad training at the interface of science, engineering and medicine, and opportunities for thesis research in a wide variety of laboratories in the Harvard-MIT community. The specialization in Bioastronautics adds tailored engineering courses in aerospace biomedical engineering, human factors engineering, and space systems engineering; electives in radiation biophysics, sensory-neural systems, and musculoskeletal pathophysiology; a weekly bioastronautics journal article seminar; a summer program that begins with a week of special lectures and orientation hosted in Houston by the Baylor College of Medicine and is followed by a two- to three-month internship at Johnson Space Center (JSC); and an optional clinical preceptorship at a NASA center. These courses and hands-on field experiences prepare students for careers in space, from industry to NASA to academia.

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² <http://hst.mit.edu/bioastro>