

Human Health Research in Space

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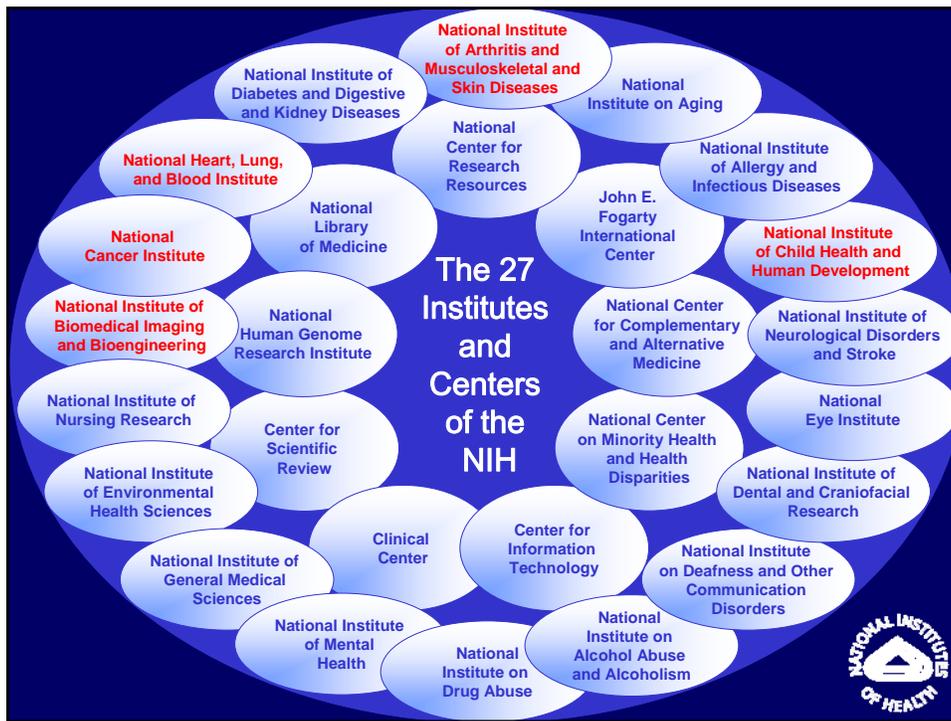
Biotechnology Utilization Planning for the ISS National Laboratory
November 14, 2008



National Institutes of Health (NIH)

- The world's preeminent medical research center and steward of medical and behavioral research for the nation.
- Its goal is to acquire new knowledge to help prevent, detect, diagnose, and treat disease and disability.





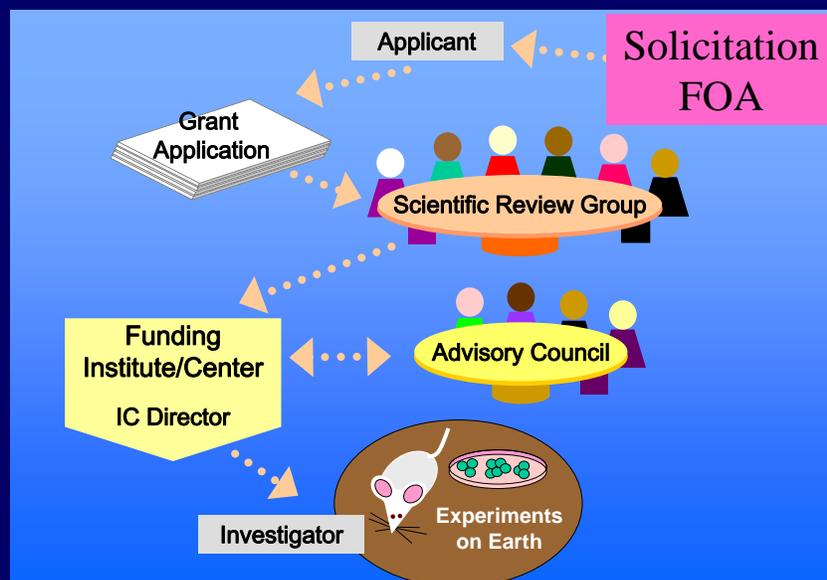
Public Health Mission

- **NIH:** Uncover new knowledge that leads to better health for everyone by
 - Supporting peer-reviewed scientific research at universities, medical schools, hospitals, and research institutions throughout United States and overseas and in its own laboratories.
 - Training research investigators.
 - Developing and disseminating credible health information based on scientific discovery.
- **NIAMS: Support**
 - Research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases.
 - Training of basic and clinical scientists to carry out this research.
 - Dissemination of information on research progress in these diseases.

NIH ANNUAL BUDGET

- More than **80%** of the NIH's funding is awarded through almost **50,000 competitive grants** to more than **325,000** researchers at over **3,000** universities, medical schools, and other research institutions in every state and around the world.
- About **10%** of the NIH's budget supports projects conducted by nearly **6,000 scientists** in its own laboratories, most of which are on the NIH campus in Bethesda, Maryland.

The NIH Grant Application



Meeting on Space-Related Health Research - December 8, 2006

- **Purpose:**
 - To share information across key Federal agencies about space-related health research interests and activities.
 - To identify opportunities for collaborations to facilitate research.



- **Meeting Participants:**
 - NIH: 12 NIH Research components
 - NASA and members of the NASA Advisory Council
 - Food and Drug Administration
 - National Institute of Standards and Technology
 - National Science Foundation
 - U.S. Department of Agriculture
 - National Space Biomedical Research Institute



Memorandum of Understanding Between the NIH and NASA

- NIH will Use Reasonable Efforts to
 - Publicize, to the intramural and extramural communities, the availability of the ISS as a research environment...
 - Give careful consideration through the standard review process to well-developed, investigator-initiated extramural applications and potential intramural activities related to space-related health research...



September 12, 2007: NIH Director Dr. Elias A. Zerhouni and NASA Administrator Dr. Michael D. Griffin shake hands after signing the MOU at the U.S. Capitol while Senators Kay Bailey Hutchison and Barbara Mikulski stand by.



Examples of NIH-NASA Earth-based Activities

- **Targeted initiatives and programs**

National Cancer Institute

- Fundamental Technologies in Biomolecular Sensors
- Nanowire Arrays for Early Detection of Cancer

Eunice Kennedy Shriver National Institute of Child Health and Human Development

- Center for Three Dimensional Tissue Culture

- **Committees**

NASA Advisory Council (NAC)

Image Guided Interventions Interagency Group

Multi-Agency Tissue Engineering Sciences (MATES) Working Group

National Science, Engineering and Technology subcommittee for the National Nanotechnology Initiative

Technologies for Metabolic Monitoring Program

- **Funding for NASA intramural investigators**

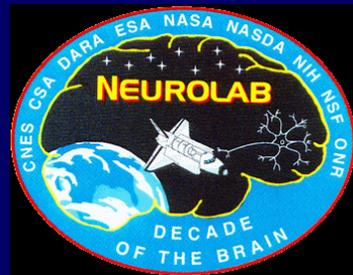


Examples of NIH-NASA Space-based Activities

- **Neurolab (STS-90)**

- **ISS experiments with NIH support**

- CBOSS-01 Colon, Expedition 3 (Jessup)
- CBOSS-02 HLT, Expedition 4 (Zimmerberg)
- CBOSS FDI, Expeditions 7, 8, 10, 12, 13 (Jessup and Zimmerberg)



Thank you and ?

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