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September 2013

NHHPC eNews

Your quarterly source of information created by NHHPC members, for members

Upcoming Events

- October 10-11, 2013: HESI, EPA, and NIEHS are co-sponsoring a workshop on Translational Alternative Models and Biomarkers Predictive of Drug or Chemical Cardiovascular Risk addressing development of new methods to assess and predict whether substances might affect cardiovascular safety in humans. Information and registration available
- November 6-7, 2013: Workshop and Networking Event for NHHPC members on "Accelerating Innovation: New Organizational Business Models, Washington, DC
- November 18, 2013: Advances in Assessing Adverse Epigenetic Effects of Drugs and Chemicals. The HESI Technical Committee on the Application of Genomics to Mechanism-Based Risk Assessment is organizing this workshop in Washington, DC to focus on epigenetics and its potential implications for toxicology. Please contact Dr. Raegan O'Lone (rolone@hesiglobal.org) for additional information
- The Arizona Center for Integrative Medicine launches the Integrative Health & Lifestyle program (IHeLp), January, 2014.

Accelerating Innovation – New Organizational Business Models, November 6-7, Washington, DC

Please plan to join us for our annual workshop and networking event for NHHPC members: Accelerating Innovation: New Organizational Business Models. Register now! (There is no cost to register, but participants must register to attend)

Kaiser Center for Total Health

The workshop, held on November 7, will be hosted by Kaiser Permanente in the Center for Total Health in Washington, DC. We're offering a great program again this year, including speakers from Harvard Business School, Jump Associates, Inc., the Conrad Foundation, and NASA. A panel of executives from industry, government, academia and non-profit organizations will discuss models for accelerating innovation across sectors, and interactive breakout sessions addressing successful business models for advancing innovation in various types of organizations will be conducted. New NHHPC member NanoRacks will provide lunch for attendees.

A networking reception sponsored by Wyle will be held the evening before the workshop on Wednesday, November 6, from 6-8pm, also at the Center for Total Health. We're excited to announce that this year special guest Scott Parazynski will kick-off this popular event with his presentation on Innovation Taken to the Extreme. Don't miss this opportunity to interact with your fellow NHHPC members!

Registration Now Open!

NHHPC News

NHHPC Wiki – A New Direction for Connecting

Until recently, the NHHPC Wiki has been exclusively available to NHHPC members for sharing contact information of the membership as well as to foster collaborative work on projects and ideas. Since NASA has moved to a new Content Management System, this service no longer meets our requirements for secure access. Additionally, members indicated they would rather not have a separate login for project work. As a result, we have disabled the wiki, and ask that you contact the NHHPC directly at nasa-nhhpc@mail.nasa.gov with inquiries regarding contact information for fellow members. This will ensure privacy of member information while still allowing you to connect directly with identified points of contact from any member organization. When you contact the NHHPC, please state which member organization you represent and the purpose for the inquiry.

Post Your Collaborative Opportunities

Do you need a partner for a research project? Want to leverage your resources with member expertise? Have a funding opportunity to promote? Our Collaborative Project Opportunities page was designed to feature postings from members seeking partners for research and technology development projects, collaborative prize competitions, innovative technologies, and new ideas. Send us your project ideas and technical needs for posting and stay connected. Currently featured collaborative opportunities and technical needs are shown on page 3.

Welcome New Members

We are proud to announce that the NHHPC now has 136 member organizations! Please welcome our newest members:

- The Conrad Foundation
- The DNA Medicine Institute
- HELLO HEALTHCARE
- Marblar
- The Matrixx Power Suit Company
- The Institute for Regenerative and Antiaging Medicine (ISMERIAN)
- NanoRacks LLC
- Nanotech Bioscience Technologies, PVT. LTD
- Robert Wood Johnson Foundation
- Satellite Applications Catapult
- Urban Green Design
- US Army Special Operations Command

We want your input!

Do you have other ideas for categories? News you want to share? Please e-mail at any time. NHHPC eNews will be collated and distributed on a quarterly basis.

Keep up-to-date on Twitter

Did you know the NHHPC is on Twitter? Follow us at @NASAHumanHealth for the latest member news, events, collaborative opportunities and updates. We have acquired over 1,000 followers over the last year! Don't miss out and stay up to date.

Collaborative Opportunities

CASIS Offers Funding Opportunities for Space-Based Research

As manager of the International Space Station U.S. National Laboratory, the Center for the Advancement of Science in Space (CASIS) supports space-based research that improves healthcare, commercial products and the overall quality of life on Earth. CASIS accepts unsolicited proposals at any time to encourage out-of-the-box ideas from new-to-space investigators. See our website for new funding opportunities and to read information about the unsolicited proposals process.

NSBRI is soliciting for program proposals to establish a Center for Space Radiation Research

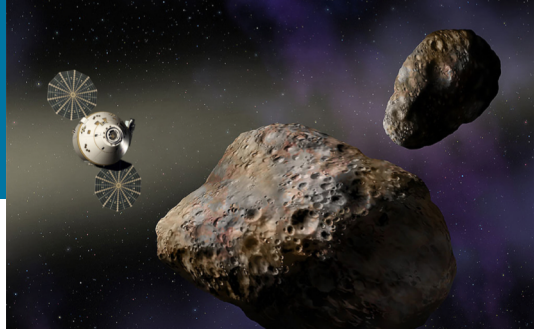
The National Space Biomedical Research Institute (NSBRI) is soliciting for program proposals to establish a Center for Space Radiation Research (CSRR). The CSRR will build upon important discoveries made by the NSBRI Center of Acute Radiation Research and extend them by characterizing and quantifying the effects of space radiation on living systems. Operating in close partnership with NASA's Human Research Program, the CSRR will be tasked with researching the acute effects of space radiation, as well as the longer term, so-called "degenerative" effects of space radiation on the cardiovascular and circulatory systems. Accordingly, the CSRR will work to reduce the radiation related health risks that will be encountered by astronaut crews during future missions to an asteroid, the Moon or Mars. This research announcement entitled "Center for Space Radiation Research" was released by NSBRI on August 14, 2013. Learn more and apply.

NSBRI is soliciting for Research Proposals to Develop Countermeasures and Technologies to Reduce Biomedical Risks in Human Space Travel

The National Space Biomedical Research Institute (NSBRI) is soliciting for ground-based, analog definition and flight definition research proposals to develop safe and effective countermeasures and technologies that will reduce the significant biomedical risks associated with human space travel. These discoveries will not only enable safe and productive human spaceflight, but will also have the potential to improve life on Earth. Research topics include Cardiovascular Alterations, Human Factors and Performance, Musculoskeletal Alterations, Neurobehavioral and Psychosocial Factors, Sensorimotor Adaptations, and Smart Medicine & Technology. This NSBRI research announcement, (NRA) may be viewed at www.nsbri.org under the Funding Opportunities menu, within the Current Announcements section.

HESI Seeks Participants in the Selection of Safer, Sustainable Chemical Alternatives

HESI - a global scientific foundation for collaboration - is developing a multi-sector effort to evaluate and identify key elements/criteria and tools to help trigger and guide the selection of safer, sustainable chemical alternatives while minimizing the likelihood of regrettable substitutions. The program is seeking committed participants to further develop frameworks, create innovative approaches, and hone best practices!! Contact spettit@hesiglobal.org with interest.



Member News

NHHPC Education and Outreach Group Announces Winners for Second Asteroid Contest

NHHPC members partnered once again to sponsor a middle school education contest using the student's knowledge in life sciences to develop technology needed for a trip to work on an asteroid. Below are the 2013 winners. This contest was a collaboration between the NNHPC education members and was conducted by Clemson University with the judging completed by their undergraduate students. Although the contest was directed at middle school class rooms, home schoolers and small private educational organizations found it useful in their educational activities too. The Education and Outreach group would like others to use this for their own contest. It is available on the NHHPC member Clemson University Department of Psychology web site.

2013 Contest Winners

First Place Winner - "Asteroid Proposal"
Steven and Justin, Texas

Second Place Winner - "Asteroid"
Aniketh, Virginia

Third Place Winner - "NHHPC Asteroid Contest"
Lillith, Adia, and Anna, New York

Honorable Mention - "Asteroid PowerPoint"
James, South Carolina

Honorable Mention - "Air and Sleeping"
Courtney, South Carolina

Honorable Mention - "Traveling to an Asteroid"
Maggie, South Carolina

Honorable Mention - "Asteroid Mission Project"
Caroline and Sarach

Honorable Mention - "NASA Asteroid Project"
Sydney, South Carolina

Honorable Mention - "Air and Exercise"
C'erra, Richard, Lorenzo, & Isaiah

NASA Ultrasound Technology Chosen for Space Technology Hall of Fame

Two ultrasound devices developed by NASA's Johnson Space Center and Mediphan were inducted into the Space Technology Hall of Fame on April 11. The DistanceDoc, which allows remote ultrasound users to transmit images securely in real time over the internet, and MedRecorder, which captures diagnostic-quality images for future reference, both allow for telemedicine ultrasound procedures to be performed by minimally trained individuals in previously inaccessible locations.

The enabling technologies were derived from the Advanced Diagnostic Ultrasound in Microgravity project, which produced a specially designed ultrasound currently installed on the International Space Station. It was developed through collaboration between NASA's Johnson Space Center, the Henry Ford Hospital, and Wyle Laboratories Inc.

Aided by software and guidance from experts on Earth, the new system empowered crew members with minimal technical training to image a wide range of body parts to track the effects of space flight on various bodily systems. Applications on Earth include telemedicine ultrasound diagnosis, remote training and instruction for medical students, and rapid diagnosis in sports medicine.

Member News

Arizona Center for Integrative Medicine Launches Integrative Health & Lifestyle Program

The Arizona Center for Integrative Medicine is excited to announce that applications are now being accepted for their inaugural class of the Integrative Health & Lifestyle program (IHeLp).

This 6-month online certificate program provides nurses, dietitians, therapists, and other health care professionals with foundational knowledge in an integrative, healing-oriented approach to care, addressing the whole person: mind, body, and spirit, using a partnering approach with a focus on meeting the patient where they are. Participants will gain a broad understanding of how to utilize lifestyle approaches to improve health and wellbeing, including nutrition, mindfulness, and physical activity. They will learn techniques to both motivate change and reduce stress, and develop a solid understanding of complementary approaches such as manual medicine, traditional Chinese medicine, and energy work.

To learn more, visit www.azcim.org/ihelp. Class size is limited so apply today. Classes begin January 2014.

Robert Wood Johnson Foundation (RWJF) Pioneering Ideas Podcast

RWJF is pleased to offer the first episode of its Pioneering Ideas podcast. Tune in to get insight into the Pioneer funding strategy in a Q&A with Team Director Brian Quinn. Next, in a conversation about our recent Behavioral Economics Call for Problems. Senior Program Officer Lori Melichar and Drs. Kevin Volpp and David Asch, co-directors of the Foundation's Behavioral Economics Initiative at the University of Pennsylvania, talk about the pros and cons of making proposals public so ideas can spread. Then Harvard's Ted Kaptchuk, a Pioneer grantee, talks about the developing science of placebo studies. And Senior Program Officer Paul Tarini talks with Pioneer grantee Ben Heywood about how Patients Like Me could change medical practice and research. It's a stimulating mix of conversations, all of which offer a window into what, exactly, constitutes a pioneering idea. Listen now or download this episode.

NanoRacks Receives American Astronautical Society ISS Innovation Award

NanoRacks was awarded the American Astronautical Society (AAS) International Space Station (ISS) Innovation Award on July 16, 2013. The AAS ISS Innovation Award is given to an organization demonstrating novel or groundbreaking applications, technologies, or processes for advancing science and exploration utilizing the International Space Station's unique characteristics as an orbital platform and laboratory. NanoRacks was recognized for for extrapolating the modular concept that the space station was built on down to the nanolabs, enabling the use of the same piece of hardware for experiments, from those done using parabolic flights to those operated aboard spacecraft in orbit to those launching to the microgravity platform of the space station. This innovation cuts development costs for microgravity research significantly.

Member News

Ready, Set, Launch! The Spirit Innovation Challenge

The Conrad Foundation conducted a global kick-off event celebrating the start of the 7th annual Spirit of Innovation Challenge on Aug. 21 at Space Center Houston. The program featured presentations on why YOU want to be a part of the 7th Annual Spirit of Innovation Challenge, world-famous entrepreneurs discussing how education and innovation put them on the path to success, and trade secrets for competition success from past victors. The event was live streamed and presentations were simulcast around the world. Learn more at www.conradwards.org.

Exploration Architecture Corporation's XArc Spaceport Consultants (XSC) Conducting an Economics and Business Study for a proposed commercial spaceport

Exploration Architecture Corporation's XArc Spaceport Consultants (XSC) team are conducting an "Economics and Business Study" for a proposed commercial spaceport to be developed at Ellington Airport in Houston, TX. The team was chosen by the Houston Airport System to provide assessments of economic viability and the business case for developing Ellington Airport to operate as a FAA licsened commercial spaceport for horizontal take-off and landing spacecraft. The team will be lead Sam Ximenes of XArc (San Antonio, TX), with Futron Corporation (Bethesda MD), and The Aerospace Corporation (El Segundo, CA) providing subcontracted support. Both XArc and Futron are NHHPC members.

Rice Alliance Named #1 University Business Incubator in the World

Rice University's Rice Alliance for Technology and Entrepreneurship has been named the top global university business incubator of 2013, according to the first in-depth study by the University Business Incubator (UBI) Index, based in Sweden.“Rice Alliance’s exceptional overall performance, contribution to the ecosystem, especially through high job creation and outstanding value to their clients propelled it to the top spot in the 'global' category,” according to the UBI Index report.

The Rice Alliance is host to the Rice Business Plan Competition, the world’s largest and richest business plan competition with more than $1.5 million in prizes. The Rice Alliance also hosts the flagship Technology Venture Forums (venture capital conferences) and is a supporter of the Rice OwlSpark Accelerator, a student-led startup accelerator, along with many other programs. Over the past 13 years, the mission of the Rice Alliance has consistently been to support technology commercialization, entrepreneurship education and the launch of technology companies. During this time, more than 1,400 startup companies have benefited from Rice Alliance programs, and these companies have raised more than $2.7 billion in funding.

Col. Gregory H. Johnson Named CASIS Executive Director

Gregory H. Johnson, Colonel (Ret), was named executive director for the Center for the Advancement of Science in Space (CASIS) – the nonprofit entity selected by NASA to manage the utilization of the International Space Station (ISS) U.S. National Laboratory. Col. Johnson assumed his role September 1, 2013.

Member News

Rechanneling the Current Cardiac Risk Paradigm

HESI-CSRC-FDA Workshop. HESI, FDA, and the Cardiac Safety Research Consortium convened the workshop Rechanneling the Current Cardiac Risk Paradigm: Arrhythmia Risk Assessment During Drug Development Without the Thorough QT Study, at the FDA White Oak Facility on 23 July 2013. Over 180 scientists from government, academia and industry attended and discussed a comprehensive panel of ion channel assays, in silico modeling and stem cell assays to assess proarrhythmic risk. This would represent a new paradigm that has real potential for obviating the need for clinical Thorough QT studies, making cardiovascular risk assessment more efficient. The HESI Proarrhythmia Working Group will further explore a potential assay panel and next steps to validating the assays. Please contact Ms. Jennifer Pierson (jpierson@hesiglobal.org) for more information.

The 2014 International Humans in Space Youth Art Competition is looking for partners!

Would you like to:

- Host a youth artwork display or performance event in your local community in 2013-2014? Exhibit an engaging mix of visual, literary, musical and video artwork addressing questions about the future of human space flight and exploration, created by young people aged 10-18 years old from over 50 countries?
- Become a partner for the 2014 Online Competition? Topics currently under consideration include Space Benefits to Earth, The Human Body in Space, and many more potential themes (see www.humansinspaceart.org).

Please join NHHPC member USRA and the space community in inspiring the world, contact: humansinspaceart@lpi.usra.edu

HESI RISK 21 Workshop on Approaches, Challenges, and Opportunities in Chemical Risk Assessment

On July 5, 2013, the HESI Risk Assessment in the 21st Century (RISK21) Technical Committee organized a workshop in Tokyo with nominal support by the Society for Risk Analysis Japan. Over 60 scientists from government, academia, and industry participated in the workshop, which created an international and multi-disciplinary forum to exchange information regarding current approaches, challenges, and opportunities in chemical risk assessment. The status of chemical risk assessment in Japan was presented by representatives from the National Institute of Health Sciences, the National Institute of Environmental Studies, and the National Institute of Advanced Industrial Science and Technology. Academic researchers discussed emerging issues in Japan, including nanomaterial hazard evaluation and risk assessment of pharmaceuticals in the environment. Leaders of the HESI RISK21 Technical Committee presented new strategies and approaches of chemical risk assessment with case studies, and stimulated discussion among the participants on their applicability in Japan and globally. The workshop ended with a panel discussion regarding how to promote dialogue to foster international harmonization in strategic approaches to chemical risk assessment. Workshop materials, presentation slides, and other information are available. For more information, contact Dr. Michelle Embry (membry@hesiglobal.org), Dr. Jennifer Tanir (jtanir@hesiglobal.org) or Ms. Ayako Takei (atakei@hesiglobal.org), HESI Scientific Advisor in Japan.

Dr. Timothy Pastoor (Syngenta), co-chair of RISK21 Technical Committee presented the RISK21 Roadmap and Matrix in Japan.

Member News

NASA and Nike Partner to Assess Use of Modified Nike+ Hyperworkout shoe on ISS

NASA and Nike signed a Space Act Agreement to explore possible adaptation of the Nike+ Hyperworkout shoe for use during exercise sessions on the International Space Station (ISS). Crewmembers aboard ISS are required to perform a wide variety of resistance exercises to protect the musculoskeletal system against microgravity induced atrophy using the Advanced Resistive Exercise Device (ARED). The ARED instrumentation box and force plates, meant to display exercise prescriptions and record the exercise loads and repetitions performed by each crewmember, have been out of service since 2011 and won't be repaired for 1-3 years. As a result, the crew must manually complete exercise logs that are monitored for adherence to exercise prescriptions and strength adaptations, and to advance design of exercise programs. The loss of automatic reporting has been identified as a top program risk by the Human Research Program (HRP), who is sponsoring numerous research studies that require ARED load data. The HRP will evaluate the Nike+ shoe as a surrogate exercise monitoring system while the ARED is being repaired. Under the partnership, NASA and Nike are examining the possible use of data from the instrumented workout shoes as a means to monitor ARED exercise sessions.

Space Florida Partnership Offers STEM Internship Program

The NASA Florida Space Grant Consortium (FSGC) and Space Florida (SF) partnered to host a paid STEM Internship Program at the Space Life Sciences Laboratory (SLSL), Exploration Park KSC, during summer 2013. The goal of the program was to train and recruit Florida science and engineering students into the aerospace and aviation workforce as future employees, while encouraging further study and academic achievement. The selected interns and information on their projects are shown below.

Back Row: Intern Raed Narvel (UF), Dr. Wayne Nicholson (UF), Intern Nathaniel Garland (UF), Dr. David Smith (NASA), Dr. Michael Roberts (CSS-Dynamac). Front Row: Tony Gannon (Space Florida), Intern Ms. Kelly Gray (FIT), Dr. Debbie Wells (Neuprene Inc.), Intern Kimberley Lineberger (FIT).

- Ms. Kelly Gray: "Optimization of growth conditions for Synechocystis SK-14"
- Ms. Kimberley Lineberger: "Microbial Monitoring Comparing qPCR Platforms for ISS Integration"
- Mr. Raed Narvel: "Development of Antibiotic Resistant Microbes During Human Space Flight"
- Mr. Nathaniel Garland: "SyNRGE3 Symbiotic Nodulation in a Reduced Gravity Environment Cubed "