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April 2013

NHHPC eNews

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

Upcoming Events

- International Space Apps Challenge on April 20-21
- Upcoming Member Events: 3rd Annual U.S.-CHINA PHARMA™, Boston, May 21-22, 2013. Dr. Eugene Buff of Primary Care Innovation Consulting will lead a round table discussion about Open Innovation.
- Association of Space Explorers "Citizens of Space – Stewards of Earth"
- 19th IAA Humans in Space Symposium
- Humans in Space Youth Art Contest
- Workshop for NHHPC members on "Accelerating Innovation - How Organizations Target Breakthroughs for Human Health and Performance," October, 2013.

Welcome New Members!

Please welcome our newest member organizations and see what they have to report in this issue of NHHPC eNews:

- Jump Associates, LLC
- ObjectSecurity, LLC
- ILSI Health and Environmental Sciences Institute (HESI)
- Space Florida
- Rice Space Institute
- Center for the Advancement of Science in Space (CASIS)
- Enventure
- TopCoder, Inc.

Message from the Director

Dear NHHPC Community,

Welcome to the March issue of NHHPC eNews, I hope you are all off to a good start in 2013. We're proud to announce that our membership has now reached 129! Several new collaborative projects among members are already underway, and others have posted new research, funding, and collaborative project opportunities on our website that you can take advantage of, so this year promises to be busy and productive.

I hope you all will join us for our Fall workshop for NHHPC members on "Accelerating Innovation - How Organizations Target Breakthroughs for Human Health and Performance." We have decided to postpone the June workshop to October based on budget concerns. We will open the meeting with great keynote speakers, and are planning facilitated technical breakout sessions focused on the development of new projects —please send us your ideas and we'll incorporate them into the program!

This summer, the NHHPC will be featured in a plenary session with one of our international partners, the Institute of Aerospace Medicine of the German Aerospace Center (DLR), which is opening a new medical research facility in July called :envihab. Please check the website for updates about the opening of this exciting new collaborative research center.

I want to thank the membership for your continued support of the NHHPC, the Innovation Lecture Series, our workshops, and your collaborative efforts. The NHHPC team and I look forward to seeing you in October for the workshop. Until then,

Jeff

NHHPC News

Member to Member Connect Update

Value-adding integration was the subject of a Member-to-Member Connect webcast delivered by Nigel Moore, CEO of Green Leader Limited, on February 21, 2013. Nigel called his presentation 'The True Mother of Invention' because the concept and methods described are intended to support improvement and innovation at every stage for products, public services and rare disease healthcare and research, as well as enhance innovative collaboration. The aims of the presentation were to: make the methodology accessible to NHHPC Members; start discussion and sharing of innovation methodologies; and encourage improved methodologies. Nigel welcomes comments and collaboration on aids to successful innovation. The presentation and the accompanying notes are available from the Green Leader Limited entry on the NHHPC members wiki. Please contact us if your organization is interested in conducting a Member to Member Connect webcast for NHHPC members.

Keep up-to-date on Twitter

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

Post Your Collaboration 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 needs for posting and stay connected.

We want your input!

Do you have other ideas for categories? News you want to share? Please send your feedback and input to MoPad at any time. NHHPC eNews will be collated and distributed on a quarterly basis. E-mail us if you have any questions.

Featured Project Opportunities

Seeking Participants in the Selection of Safer, Sustainable Chemical Alternatives

ILSI Health and Environmental Sciences Institute (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. This program has already engaged leading experts from regulatory bodies, academe, and industry to scope the current landscape via a February 2013 workshop at the NIEHS. The program is now seeking committed participants to further develop frameworks, create innovative approaches, and hone best practices!! Contact spettit@hesiglobal.org with interest.

New Research Program on Translational Biomarkers for Neurotoxicity

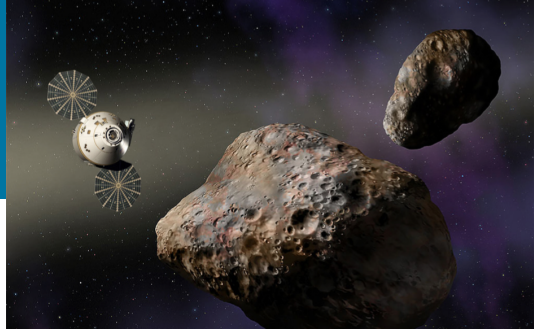
HESI is also launching a new research program on translational biomarkers of neurotoxicity. The project will engage US and international regulatory agencies, academics, and industry scientists to identify and evaluate circulating markers of neurotoxicity that may be translated from animal models to the clinic to assess safety. The project will hold its first meetings in early 2013 so the time is right to join in. Contact: spettit@hesiglobal.org

CASIS - Offers Funding Opportunities for Space-based Research

The Center for the Advancement of Science in Space (CASIS) is now a member of the NHHPC. As manager of the International Space Station U.S. National Laboratory, CASIS supports space-based research that improves healthcare, commercial products and the overall quality of life on Earth. Recently, CASIS announced the awardees from its first Request for Proposals (RFP), which was in the field of protein crystal growth—and soon CASIS will be announcing awardees from its second RFP, which focuses on materials science. Additionally, CASIS accepts unsolicited proposals at any time to encourage out-of-the-box ideas from investigators new to spaceflight. See our website for new funding opportunities and to read information about the unsolicited proposals process.

SBIR/STT TecFusion - A custom Open Innovation program

NASA's SBIR/STTR TecFusion is a custom Open Innovation program designed to meet your technology needs. Through the NASA SBIR/STTR TecFusion Open Innovation process you can tap into a wealth of highly creative and often breakthrough research. Rather than attending conferences and other events in hopes of surfacing a potential partnership, TecFusion will bring highly vetted technologies to your organization. Leveraging the $2.6 billion invested annually in the SBIR/STTR Program leads to increased capability, reduced risk, lower cost, and shortened schedule for your program or project.



Member News & Projects

NHHPC Education and Outreach Group Launches a Second Asteroid Contest

NHHPC Member organizations including: Clemson University, Orion's Quest, and Square One Education Network have once again partnered for the 2013 NASA Asteroid Contest. This is the second year of this partnership which targets 6th through 8th grade students. The goal of this contest is to engage more students in the fields of Science, Technology, Engineering, and Math by providing an opportunity for them to explore and discover while also meeting National Education Standards.

Although winners of the Asteroid Contest will not receive prizes or monetary awards, select winners of the challenge who have displayed exemplary workmanship and creativity will have the opportunity to have their presentations highlighted on the NASA website. Creative Inquiry students at Clemson University working with Dr. Benjamin Stephens have been involved in designing the challenge and creating the website. The competition opened on January 15, 2013 and submissions were accepted through March, 8th, 2013. Guidelines for submitting solutions can be found at Clemson site.

ObjectSecurity Releases SemanticXWiki Open Source Project

ObjectSecurity announced that they have released their Semantic XWiki open source project developed as part of a European Space Agency (ESA) funded project. ObjectSecurity is the official author, maintainer, and supporter of the Semantic XWiki open source project. The project integrates XWiki, a state-of-the-art Wiki technology project with Apache Jena, the latest semantic web technology. The aim of the first phase of the project was to provide the basic integration of the two technologies with the best support for the Wiki programmer or advanced user. The project supports a set of custom defined XWiki macros which are usable for XWiki application programmers or advanced users to create custom semantic-based XWiki applications. These macros are used instead of semantic tagging based on the content of the wiki or any kind of automatic semantic search. Technical details include: custom defined XWiki macros to create custom semantic-based XWiki applications, automatic semantic properties life-cycle management, macros for creation of XWiki pages from XWiki templates, eclipse XWiki extension, Eclipse Ecore integration. For more information please visit our project information and download website or contact Dr. Ulrich Lang, ObjectSecurity, info@objectsecurity.com, +44 1223 420252 / +1-650-515-3391.

NASA Tournament Lab Asks the Crowd to Help Track what Astronauts Eat

NASA is using crowdsourcing to help track what astronauts eat. Living in a zero-gravity environment poses risk of nutrient deficiency and bone loss, so keeping close tabs on food intake in space is crucial. But the ISS crews complain that their meal monitoring methods are unreliable and tedious. Imagine having to recount everything you ate in a week while orbiting the Earth. That's what astronauts do in a weekly "food frequency questionnaire." The NASA International Space Station Food Intake Tracker—or ISS FIT—Challenge, launched February 10, is the latest open-innovation contest sponsored by the NASA Tournament Lab—a partnership between NASA, Harvard's Institute of Qualitative Social Science, and new NHHPC member TopCoder, a competitive software-development community.

Member News & Projects

Space Florida Announces ISS Research Competition Winners

Space Florida, the state's aerospace development organization and spaceport authority, and NanoRacks, LLC, recently announced the winners of the International Space Station (ISS) Research Competition at The American Society for Gravitational and Space Research (ASGSR) Meeting in New Orleans, Louisiana. A team of 15 independent judges evaluated the proposals based on defined value in the commercial marketplace, potential for future benefits in space travel, and professional qualifications of the applicants. "Four winning proposals originated from the commercial field and four in the area of education and research," said Tony Gannon, Director Research & Project Development. The winners will each receive research payload transportation to the ISS via an upcoming SpaceX Falcon 9 rocket launch from Cape Canaveral Air Force Station. Launch is currently slated for September 30th 2013. View the Space Florida site for full details of the winners and their research experiments.

NSBRI Funds Cerebrotech to Accelerate Development of Brain Monitoring Device

The National Space Biomedical Research Institute (NSBRI) announced that Cerebrotech Medical Systems, Incorporated of Pleasanton, California is the recipient of the 2013 Space Medicine and Related Technologies Commercialization Assistance Program (SMARTCAP) award. Cerebrotech will receive a $250,000 grant to advance the development of its non-invasive portable monitor to detect changes in brain fluid levels using a novel magnetic induction phase-shift spectroscopy (MIPS) technology invented at U.C. Berkeley. In space, such a device could be used to monitor astronauts' brains to help NASA understand a new syndrome manifesting with visual defects and elevated intracranial pressure. On Earth, it can be used for early detection and ongoing monitoring of brain edema and bleeding in cases such as stroke or brain trauma.

SMARTCAP is an openly solicited competitive program intended for small U.S. companies developing biomedical products that have the potential to safeguard the health of astronauts in space, as well as meet a medical need of patients on Earth. The program is managed and overseen by NSBRI's Industry Forum.

"By developing disruptive solutions for medical care in space, we are also impacting health care on Earth," said Dr. Dorit Donoviel, NSBRI Deputy Chief Scientist and Industry Forum Lead. "NSBRI's mission is to ensure astronaut health and use the knowledge and technologies developed for humans in space to improve life on Earth. The NSBRI Industry Forum engages the private sector to provide solutions for human spaceflight. Because a high bar is set for medical care in space, solutions developed for space generally possess unique features that translate to a competitive commercial advantage in terrestrial markets."

Mitch Levinson, CEO of Cerebrotech, demonstrates the technology to the NSBRI Industry Forum on February 26, 2013

Member News & Projects

Three major space events in Germany hosted by DLR – be a sponsor and become part of the action!

In July 2013, Germany and especially the area of Cologne, with its world famous Cathedral will be the place for astronauts and scientists to meet and discuss the topics of space medicine, opportunities in exploring space, and of responsibility for the Earth. There are three major events in which you could support:

Association of Space Explorers

“Citizens of Space – Stewards of Earth”: DLR invites you to become a partner of the XXVI Planetary Congress of the Association of Space Explorers! Meet the space fliers and be part of this extraordinary and unique event. For further information please visit www.ase26.org

19th IAA Humans in Space Symposium

"Linking the challenges of space exploration with medicine on Earth". In recent decades, space life sciences research has resulted in many advances in our knowledge of how the human body and life itself works. It is now time to end the artificial separation between space and terrestrial life sciences and to focus on those questions of life sciences for which space experiments can give answers. Therefore, the 19th IAA Humans in Space Conference (www.his2013.com) will focus on basic major questions and challenges and attract respective specialists. Become a partner and be a part of this important scientific congress, contact: Friederike.wuetscher@dlr.de

International Humans in Space Youth Art Contest

Youth worldwide between 10 and 18 years were invited to learn about space exploration and express their view of "How will humans use science and technology to explore space, and what mysteries will we uncover?" through musical, visual, literary, or video artwork (www.humansinspaceart.org). The competition was open until November 2012 and the artwork is now being judged. On July 8th, 2013 the competition winners will be awarded at the Humans in Space Symposium in Cologne, and their contributions will be woven into multimedia displays and performances aired at numerous venues worldwide. DLR offers funding opportunities that include contributions to artist awards, artwork tours, or future art competitions. There are numerous partnership opportunities through DLR Please contact: Friederike.wuetscher@dlr.de

GE Flexible Ultrasound System

NASA recently awarded a contract to GE’s Global Research Center (Niskayuna, NY) to develop the Flexible Ultrasound System (FUS), a software-based ultrasound system which will allow the device to be used for both clinical and research applications. The software-based design of the FUS provides a dual benefit to NASA by facilitating the integration of custom diagnostic and therapeutic ultrasound modalities being developed by NASA-funded researchers and by allowing engineers to design a more robust and reliable system that will meet the challenging radiation environments of deep-space. Dr. Kieran Wall will lead the project at GE.

Member News & Projects

Girlstart and Global STEM Network Friends 2012 report

Girlstart, in conjunction with its Global STEM (Science Technology Engineering and Math) Network Friends, was able to expand Girlstart After School to reach 705 girls in 35 schools and ten districts every week in 2012, and grow Girlstart Summer Camp to reach 563 girls in Texas and beyond—229 girls attended camp at no cost. In all, Girlstart bring brought high quality STEM programming to more than 11,000 people this year, 96% of whom participated at no cost. In addition to our ability to reach more girls, Girlstart programs are gaining national a reputation for quality and impact. Change the Equation, the Afterschool Alliance, and the Department of Education have all identified Girlstart programs as a unique model for STEM education in the nation. Girlstart is also working on research related to the impact of their programs, including collecting data related to Girlstart After School's impact on academic achievement.

Non-Invasive Monitoring of Intracranial Pressure (ICP) with Volumetric Ophthalmic Ultrasound

Dr. Aaron Dentinger of GE's Global Research Center (Niskayuna, NY) received an NSBRI grant to develop a technique for monitoring changes in intra-cranial pressure (ICP) during spaceflight. Dr. Dentinger uses 3-dimensional ophthalmic ultrasound imaging to non-invasively monitor ICP by detecting changes in the structure and functioning of the eye. He will develop an ultrasound probe for ophthalmic scanning through a closed eyelid and integrate the new probe with a portable, high-resolution medical ultrasound scanner that is similar to the Ultrasound-2 system currently deployed on ISS. This work is part of NSBRI's Smart Medical Systems and Technology Team, on which Dr. Dentinger also currently serves as the Associate Team Leader.

NASA and Agencies Worldwide to Host Second International Space Apps Challenge

NASA and government agencies worldwide will host the second International Space Apps Challenge on April 20-21, 2013 with events across all seven continents and in space. Participants are encouraged to develop mobile apps, software and hardware, data visualization, and platform solutions that could contribute to space exploration missions and help improve life on Earth. Over 50 cities world-wide will participate, in addition to explorers living and working at McMurdo Station in Antarctica and onboard the International Space Station. The two-day event will provide an opportunity for government to harness the expertise and entrepreneurial spirit of citizen explorers to help address global challenges. During the event, representatives from NASA and other international space agencies will gather with scientists and participants to use publicly released open data to create solutions for 50 software, hardware and visualization challenges, including robotics, citizen science platforms and applications of remote sensing data. "What sets apart the International Space Apps Challenge from other events is that this is a collaborative opportunity to engage people from all over the world to participate in space exploration and develop state-of-the-art technology to improve life on Earth and in space," said Nick Skytland, program manager of NASA's Open Innovation Program. To learn more about the International Space Apps Challenge, visit: spaceappschallenge.org

Member News & Projects

Center for Nutrition, Learning, and Memory

NASA's Johnson Space Center (JSC) in Houston and Epiomed Therapeutics Inc. of Irvine, Calif., have signed an agreement to develop and commercialize a NASA-crafted, fast-acting nasal spray to fight motion sickness. Under a Space Act Agreement, Epiomed will formulate the drug, called intranasal scopolamine, or INSCOP. Because astronauts often experience motion sickness in space, NASA has conducted extensive research into the causes and treatments for the condition. Scopolamine is effective and can be administered as a tablet or injected. With a precise dosage, the NASA spray formulation has been shown to work faster and more reliably than the oral form. A gel formulation of INSCOP was developed and tested under a Space Act Agreement between JSC and the Naval Aerospace Medical Research Laboratory in Pensacola, Fla. Results from that trial were published in the journal, Aviation, Space and Environmental Medicine, in April 2010, that suggest INSCOP is a fast-acting and reliable way to prevent and treat motion sickness. The U.S. Navy is working on an agreement with Epiomed to test the nasal spray. NASA and Epiomed will collaborate on clinical trials related to the Federal Drug Administration (FDA) requirements. NASA is transferring sponsorship of future clinical trials and FDA approvals to Epiomed, which will supply the product for use by NASA and others.

Space Florida announces Wyle as Lead for Repurposing Study for the Space Life Sciences Laboratory

Recently Space Florida competitively awarded Wyle a contract to undertake a Repurposing Study of the Space Life Sciences Laboratory, Exploration Park, near Kennedy Space Center, Florida. The Study comprises three distinct elements; (a) Operations & Maintenance Study, (b) Laboratory Equipment Assessment and Future Requirements Study, (c) Future Growth and Expansion Study. The Wyle team is expected to produce a Final Report to Space Florida by the end of April, 2013. The Study is being led by Mr. Alan DeLuna and Ms. Elizabeth Richard. View the details on the Space Life Sciences Laboratory, Exploration Park at KSC, at the Space Florida site.