Shaowen Hu was the recipient of the prestigious Fowler Award at the 55th Annual Meeting of the Radiation Research Society in Savannah, Georgia. The Fowler Award recognizes an outstanding young investigator for exceptional work in radiation oncology, medical physics, and/or radiobiology. Congratulations, Shaowen!

The following DSLS team members were honored during an afternoon reception for their years of service to the organization:

- Terri Jones - 15 years
- Megumi Hada - 5 years
- Janice Huff - 5 years
- Jancy McPhee - 5 years
- Artem Ponomarev - 5 years
- Victor Schneider - 5 years
- Scott Wood - 5 years
- Dazhuang Zhou - 5 years

Welcome to DSLS!

Oleg Belyakov, PhD, is DSLS’ newest team member. Dr. Belyakov graduated from the Department of Biology at St. Petersburg State University and obtained a MSc in Radiobiology from St. Bartholomew's and the Royal London Hospital School of Medicine and Dentistry, QMW, University of London, UK. His PhD work entailed a collaborative project between the Gray Cancer Institute, Northwood, UK (today the Gray Institute for Radiation Oncology and Biology at the University of Oxford) and the Radiation and Environmental Science Centre, Dublin Institute of Technology, Ireland.

Oleg did his postdoctoral work at the Radiological Research Accelerator Facility of Columbia University. Oleg joined the Radiation and Nuclear Safety Authority (STUK), Helsinki, Finland as a Senior Scientist and a Marie Curie fellow and most recently was coordinating work for the Non-Targeted Ionizing Radiation Effects (NTIRE) Research Group within the Radiation Biology Laboratory at STUK. In 2006 Oleg became and Associated Professor (Docent) in Radiation Biology at the Faculty of Natural and Environmental Sciences, University of Kuopio, Finland. He has been involved in numerous European project including the Non-targeted effects of ionizing radiation (NOTE) EC Integrated Project.

Oleg now serves as a Senior Scientist in the Space Radiation Health Project under the leadership of Dr. Francis A. Cucinotta. His office is located in Room 119 in Building 37, and Oleg can be reached at (281) 483-3912 or by email at oleg.v@belyakov.info.

Please join us in welcoming him to Houston and to DSLS!
NASA recently announced that 12 proposals from nine states to investigate questions about the effects of space radiation on human explorers will be funded. The selected proposals from researchers in Alabama, California, Colorado, Massachusetts, New York, Oregon, Texas, Virginia and Washington have a total value of approximately $13.7 million. The 12 awards include the following one by DSLS team members Janice Huff and Zarana Patel:

**Huff JL, Rustgi AK, Patel ZS:** "Impact of Radiation Quality on Cancer Processes in 2D and 3D Esophageal Cell Models," selected for funding in response to NNJ09ZSA001N "Ground-Based Studies in Space Radiobiology". Congratulations, ladies!
Marguerite Sognier, PhD, was recently interviewed for this edition’s Spotlight Article.

* Tell us briefly about yourself and your family.
I’m one of the few people to actually have been born in the nation’s capitol, Washington, DC. I largely grew up in northern Florida (Ponte Vedra Beach) not far from where Ponce De Leon landed. I live in Clear Lake with my husband, Jim, an electrical engineer who has worked for Center Point (light company) for 41+ years. We have an 8 year old rescued dachshund, Sydney, who keeps us constantly entertained. Whenever I have spare time, I enjoy gardening, photography, and visiting historical sites.

* What are you presently working on at JSC?
I have been at USRA for more than 12 years. I currently work part time for USRA onsite at JSC and part time for UTMB. At JSC, I have dedicated my efforts to the development of new biomedical technology for space and earth applications as part of a unique inter-directorate, interdisciplinary team between Space Life Sciences (SK) and Engineering (EV). Our Biomedical Engineering for Exploration Space Technology lab is the only cell biology/biomedical science lab in an engineering building. This enables our team to utilize tissue, cell-based, and bacterial models that I specifically design to test the efficacy of the new prototype equipment. Two of our current projects involve the development of the use of radiofrequencies (RF) to treat dental caries (cavities) and pulpal disease (root canals) without drilling. This project has currently advanced to the animal testing phase. Another project involves the use of RF to rapidly seal wounds using a biocompatible protein as solder. These and other technology development projects support future manned exploration and will have wide applications on earth.

**Continued on page 8**

**DSLS Halloween Picnic**

Even inclement weather could not keep DSLS team members and their families from having a good time at the DSLS Halloween (indoor) picnic. Among those present were a beautiful ballerina, a sweet little pumpkin, an elegant Hermione from the Harry Potter books, a tough-looking pirate (aargghhh!!) and of course DSLS administrative staff and scientists…. one of whom seemed a bit ‘madder’ than the others …. Thank you all for attending, thanks to Kay for the great photos, and special thanks to Kellie for creating all the wonderful goodie bags, doing all the shopping, and for mastering the grill despite the rain!
New Publications by DSLS Scientists


The entire HRP Evidence Book can be found at http://humanresearch.jsc.nasa.gov/files/HRP_EvidenceBook_SSP-2009-3405.pdf

Open Enrollment!

Coming soon to a computer near you: Open Enrollment! For the first time, USRA will utilize the new Employee Self-Service system (which can be found on your time-sheet website) to process Open Enrollment. You will be able to choose your benefit levels online with just a few clicks.

Stay tuned for more information about Open Enrollment over the next few days.
Recent Scientific Presentations

**Lectures**

**Cromwell R.** Importance of Spaceflight Analog Models. University of Houston graduate course PEP 7397: Research Using Ground-Based Spaceflight Models.

**Yarbough P.** Biotech: Clinical Development. Lecture at University of Houston Central Campus.

**Ploutz-Snyder L.** Exercise and Heat. Presentation at the Space Life Sciences All Hands Meeting, NASA JSC.

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**Seminars**

**Kuznetz L.** Smart Suits for the Moon and Mars. August DSLS Brown Bag Seminar, USRA Houston.

**Feiveson A,** **Ploutz-Snyder R.** Statistical Methods and Applications Review (SMAR). Professional Development course at USRA Houston.

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**Presentations at the Space Radiation Journal Club**

**Hu S.** Computational study on full-length human Ku70 with double stranded DNA: dynamics, interactions and functional implications. NASA JSC.


**Ponomarev A.** A Monte-Carlo model for the formation of radiation-induced chromosomal aberrations. NASA JSC.

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**Presentations at the 14th Workshop on Radiation Monitoring for the International Space Station (WRMISS), Dublin, Ireland**


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**Education and Public Outreach**

**Roni Cromwell** completed mentoring NSBRI Summer Intern Cheryl Goetz and UTMB graduate student Ashley Purgason and was interviewed by Frank Roylance of the Baltimore Sun for his story “Horizontal for science.” It can be found at http://www.baltimoresun.com/news/

**Lori Ploutz-Snyder** is working with Syracuse University graduate student Kyle Hackney to develop his dissertation proposal.

**Jean Sibonga** mentored summer students Rachel Ellman and Jordan Spatz.

**Scott Wood** mentored Krystin Ramos, USRA College Career Exploration Program, M. Cordova, USRP intern, and J. Kayanickuparam, NSBRI Summer Intern Program.
Sara Zwart mentored intern Sharon Mathew, DeBakey High School and assisted UTMB grad student Ashley Purgason with planning a project to analyze bed rest diet and nutrient status data. Sara also reviewed a manuscript for the European Journal of Clinical Microbiology and Infectious Disease.

Jean Sibonga recorded a podcast version 1 on bone research and reviewed manuscripts for Bone and Acta Mechanica Sinica.

Ramona Gaza completed mentoring summer intern Camille Smith from Prairie View University Research Center and supported the university’s Technical Review Committee third quarter meeting at NASA JSC.

Megumi Hada reviewed a manuscript for the International Journal of Radiation Biology.

Larry Kuznetz advised University of South Alabama graduate student Tom Miller on a progress report for the new human body thermal model and informed University of Houston professor Jane Yuan on the LEGACI model and its applicability to a wireless system.

Jeff Ryder reviewed an SBIR grant for the development of crew exercise systems.

Chris Westby volunteered as a subject for the Compression Garment study for the Cardiovascular Lab and for the Isokinetic Study for the Exercise Physiology Lab.

Patrice Yarbough prepared slides of the Flight Analog Unit at UTMB to present to 11th and 12th grade International Space School students and began teaching BTEC 2320: Biotech Regulatory Environment at the University of Houston Central Campus. Patrice was also invited to present at the Committee on Equal Opportunities in Science and Engineering (an advisory committee to NSF), October 27-28, Arlington, Virginia.

Lori Ploutz-Snyder reviewed and approved the dissertation proposal for Christopher Fry and continued to work with Syracuse University graduate student Kyle Hackney to develop his dissertation proposal.

Rob Ploutz-Snyder advised UTMB graduate student Ashley Purgason about refining her experimental design and analytic strategy for her project to analyze bed rest diet and nutrient status data and reviewed a manuscript for Medicine and Science in Sports and Exercise.

Regina Buccello-Stout teaches a graduate Psychology Research Design course at the University of Houston Clear Lake and mentors nine graduate student research projects.

Ajit Mulavara conducted a lab tour for UTMB SLS students and reviewed a manuscript for Aviation Space and Environmental Medicine.

Upcoming Meetings at USRA Houston

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<tr>
<td>Nov. 5</td>
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<td>Nov. 5</td>
<td>CRESSE External Advisory Committee Review</td>
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<td>Nov. 10</td>
<td>UTMB Orthopedics Department Grand Rounds</td>
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<td>NASA HRPEO/Smithsonian Institute Virtual Conference Debut</td>
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<td>Nov. 19</td>
<td>DSLS Brown Bag Seminar (Dr. Camille Shea, NASA BHP Element Scientist)</td>
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<td>NASA-Southwestern Oklahoma State University (SWOSU) Collaborative Meeting</td>
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<td>Nov. 24</td>
<td>Aerospace Medicine Grand Rounds</td>
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<td>Dec. 2</td>
<td>IRB: PRIM&amp;R: “At Your Door” – Protection of Human Subjects Program</td>
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Larry Kuznetz continued his documentation of Building 37 as the Lunar Receiving Laboratory during Project Apollo. The text for five plaques has been approved by Neil Armstrong, and the plaques will be installed at a dedication ceremony later this year.

Larry also completed 23 tests of the Gore-Tex-based pressure suit for Constellation entry and post-landing missions indicating .5 to .7 lbs of evaporated sweat as an upper limit of mass transfer capacity, the equivalent of removing 700 BTUs per hour. This data will be used to determine baseline requirements for dense monolithic membranes, a new class of materials with promise to greatly improve the mass transfer and CO2 rejection mechanisms in the next generation of pressure suits.

Frank Sulzman participated in a peer review of NRA proposals in Washington and in discussions of proposal selection priorities with the NASA Space Radiation Element Scientist and Manager. He further spoke with some proposers to clarify technical and budget questions.

Dazhuang Zhou was invited to write a commentary on innovative ideas, developments, direction, misdirection and the future outlook of methods using CR-39 plastic nuclear track detectors in radiation research by Nova Science Publishers for the book *Nuclear Track Detectors: Design, Methods and Application*.

Roni Cromwell and the Flight Analogs Project (FAP) recently completed the Lunar Analog Feasibility study: subjects successfully completed 6 days of 9.5° head-up tilt bed rest. The ability of subjects to tolerate the lunar analog bed allows for further development of this model. FAP is planning a 30-day head-up tilt bed rest study to begin to characterize physiological responses in this model.

Roni also collaborated with D. Paddon-Jones on his NSBRI-funded grant ‘A minimally-invasive nutritional countermeasure to combat muscle loss in inactive aging skeletal muscle’. She will assess the physical function of subjects during pre-bed rest, immediately post-bed rest, and after seven days of rehabilitation.

Ajit Mulavara has complete data collection and began the analysis phase of his study ‘Development of a Gait Adaptability Training Program as a Countermeasure for Post-flight Locomotor Dysfunction’. A galvanic vestibular stimulator for testing training protocols is being built in collaboration with the University of Sydney.

In collaboration with Lori Ploutz-Snyder as the PI Ajit submitted a new protocol ‘Neuromuscular Performance Test’, which received approval from the CPHS. Ajit’s protocol ‘Development of vestibular stochastic resonance as a sensorimotor countermeasure’ was also approved by CPHS and is being readied for implementation.

Lori Ploutz-Snyder resubmitted changes to the iRATS flight study to the CPHS, received approval, presented the study at the Sept science management meeting, and obtained a contingent “selected for flight” approval.

Lori’s proposal to the American College of Sports Medicine for a symposium during its 2010 meeting in Baltimore was accepted. Entitled ‘Cutting Edge Training and Testing Technologies for Occupations with Unique Physical Demands’, speakers will include personnel from NASA, the military, firefighters, and elite athletes.


**SMAR??**

Have you heard about **SMAR**?

**SMAR** is DSLS’ new series of professional development workshops on Statistical Methods and Applications Review! Even if you missed the initial meetings, you can still participate!

The next sessions will take place November 5 and December 3 and will focus on **Repeated Measures ANOVA**.

Join us in lively discussions about statistics and a wide variety of statistical approaches to gain knowledge from data. Lunch is provided.

Contact Dagmar at Morgan@dsls.usra.edu if you plan to attend.

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**Larry Kuznetz**

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**Lori Ploutz-Snyder**

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JSC recently published a memorandum concerning materials for export which contain imbedded pictures and graphics. It was recently discovered that when you “mouse over” photographs or pictures material information is revealed that may not be intended for public viewing. The export control approval system uses a web-based system, and the concern is that information subject to the Privacy Act and Health Insurance Portability and Accountability Act (HIPAA) may be inadvertently made public. Please make sure that your images and graphics do not contain any data that would fall under the privacy act or HIPAA requirements.

At UTMB, I am the Director of Educational Outreach and also the co-Director of the Southeast Regional T-STEM Center. This work enables me to help prepare the next generation of biomedical, health, and engineering workers through a pipeline of interconnected student programs as well as an extensive array of teacher professional development programs.

* What is most important to you regarding your work at JSC?

The most important aspect of my work at JSC is to insure that I do everything possible to advance the technology that we currently have under development. This translates into being exceptionally creative in developing new models and test beds to validate the prototypes and final equipment designs.