

HHP TODAY



The Department of Health and Human Performance

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From the Chair



Greetings! I hope you are enjoying an active and healthy spring season as we thaw out from the winter. The spring brings new beginnings and invites a fresh perspective on our endeavors.

In January, the Carnegie Foundation for the Advancement of Teaching announced that they had placed UH in the foundation's top category of research universities. This is a major milestone in our pursuit of Tier One status. I'm very proud of the distinguished HHP faculty, students and staff that contribute to the top-tier efforts of this goal.

You can keep up with many of these current activities and accomplishments, and other alumni through HHP Today.

This issue highlights lab and field work research that is seeking answers to fight disease and enhance human endurance. Get the latest on CFF's Great Strides walk on the UH campus and learn about Dr. Rebecca Lee's new book.

Also, I want to congratulate Dr. Lee upon receiving the Fulbright Scholarship award to Guadalajara, Mexico! *Way to go!*

HHP welcomes Dr. Stacey L. Gorniak as our newest faculty member who will serve as assistant professor in motor behavior. We're glad you're here!

As always, feel free to send me an e-mail at clayne2@uh.edu with any questions, comments or information about what you're doing.

Dr. Charles Layne
HHP Department Chair

The Next Golden Age

► "Integration and Cooperation in the Next Golden Age of Human Space Flight" is the theme for the International Academy of Astronautics' (IAA) 18th Humans In Space (HIS) Symposium scheduled for April 11–15 in Houston, Texas at the Westin Galleria Hotel.

HIS¹⁸
HUMANS IN SPACE

The focus will be on the concept that integration across cultures, nations, agencies, disciplines and objectives is absolutely imperative to the next chapters of the Humans-in-Space story.

The IAA's annual international scientific symposium is dedicated to the discussion and research in the human and biological sciences that relate to long-duration space travel. Attendees represent a broad spectrum of the global space life science community, and includes various representatives from governments, academia and private industries.

More than 500 participants will hear from space shuttle, commercial space flight



Astronaut Piers Sellers on the 2002 Space Shuttle Orbiter Atlantis

and Russian keynote speakers. Invited panels will discuss subjects including planetary protection and astrobiology, space radiation, space vehicle design and more. Exhibitors and poster presentations will represent the diverse interests of those attending as well.

Highlights will include special sessions devoted to the 50th anniversary of Yuri Gagarin's 1961 historic first manned space flight and the 30th anniversary of the first Space Shuttle mission in 1981, which heralded the start of a new era in space exploration.

The HIS Symposium also sponsored an International Youth Art Competition for students 10 to 17 years of age. Categories for entries were visual, literary, musical and digital art that addressed the question: "What is the future of human space exploration and why is it important?"

The winning art and selected pieces of the more than 500 submissions from around the world will be displayed in various media during the symposium and in an online gallery afterward.

HHP Professor William H. Paloski served as the Scientific Organizing Committee Chair and played an integral part in bringing the international symposium to Houston. UH and the NASA Johnson Space Center are two of the seven sponsoring organizations.

"We are very proud to host the 18th annual HIS Symposium in Houston. Many people worked very hard to provide the international space life science community an informative conference and memorable visit to the city," Paloski said.

You can learn more about the symposium and view the online art gallery at <http://www.dsls.usra.edu/meetings/IAA>. ■

Faculty Focus: Thomas Lowder



Dr. Thomas Lowder

► Dr. Lowder, after living here for two years, have you acclimated to the Houston weather? “No, I do not like humidity. I have yet to become adapted to it. But my job is really good, and that’s why I stay,” he said. That becomes apparent in talking with him and hearing his enthusiasm for his work.

Lowder earned his master’s and doctoral degrees in kinesiology at the University of Illinois before joining HHP as assistant professor in 2009.

The following is more of our conversation with him:

HHP: Your research examines how physical activity and aging affect the immune system, specifically concerning diseases of the lung. Will you elaborate on your current work in HHP?

Lowder: I look at a population of cells that have a lot of application in disease

models such as diabetes, cancer and any kind of autoimmune disease. These regulatory T cells are able to down regulate the inflammation we see in diabetes and asthma, and are up regulated during exercise. We’re trying to determine if they have any application for other diseases.

Presently, my lab is working on a pregnancy model. We’ve just shown some preliminary data that exercising female mice before pregnancy increases the immune response in the pups of these mice against asthma. This is pretty exciting stuff!

We’re also working on a cancer model. We know exercise can reduce tumor size, in that, if you implant a tumor in a mouse or if someone has cancer and they begin an exercise program, they can actually have a reduction in tumor size.

We would like to see if these particular cells have any role in cancer. They’ve been shown to block the body’s response to the disease. We might see that exercise can increase the functional capacity of these cells so that they actually decrease the tumor size in some cases.

HHP: What can you tell us about HHP that may not be found in a brochure?

Lowder: In most universities, you work with one professor. The collaborations between lab groups within HHP and other UH labs, as well as in the Texas Medical Center, allow students to be exposed to multiple research areas and data.

In addition, Lowder finds it exciting that a lot of discussions and inquiry occur outside of scientific meetings, when professors, colleagues and students visit in casual groups and talk at length about their work. He and other HHP professors meet regularly with students to informally discuss their papers, projects and current research, which keeps the students constantly thinking and motivated. He says that, ultimately, both professor and student learn from one another.

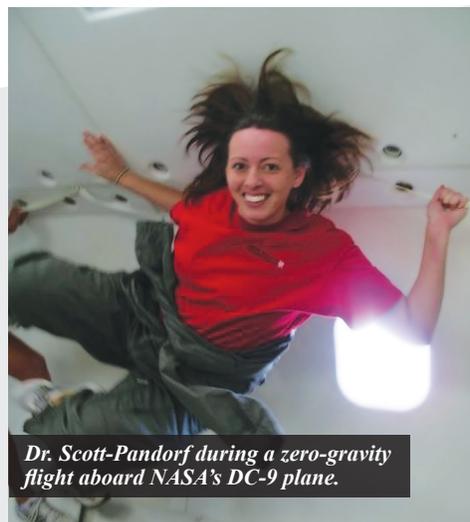
Outside of work, Lowder loves his dogs and believes his dream job would be to get paid for petting them all day. He is also a history enthusiast and a voracious reader, to the extent that he annoys his students with an unsolicited overload of information at times. ■

Alumni Spotlight: Melissa Scott-Pandorf

► When she began her doctoral studies in HHP’s kinesiology/biomechanics program, she intended to be a college professor, teaching classes and following a research track, possibly in her hometown of Callaway, Nebraska. Today, Melissa Scott-Pandorf (Ph.D., ’05) is an exercise scientist at the NASA Johnson Space Center (JSC) in Houston, Texas, working on the Exercise Physiology and Countermeasures Project.

So, what happened? When she came to HHP, she never considered NASA as a career destination. But once here, she saw the department’s collaboration and networking with JSC and soon realized the many opportunities available to her where she could apply her field of study in a unique setting.

Scott-Pandorf likes the challenge of having to think outside the box. She is currently working on modeling techniques to create exercise prescription planning in order to improve the exercise counter-



Dr. Scott-Pandorf during a zero-gravity flight aboard NASA's DC-9 plane.

measures on the space station in zero gravity. But, zero gravity cannot be created on the ground.

Team members take data from the ground and from the crew members as they exercise on the space station, calculate some biomechanical characteristics of

their movements and incorporate the information into computer modeling. This data provides scientists with an idea of the differences that can occur between zero gravity and full-gravity exercise.

She also likes her team members and colleagues at JSC. “I’m pretty lucky. There are some amazing, intelligent individuals that I get to work with on a daily basis,” she said.

The amount of research equipment available to HHP students, the close proximity to JSC and the extensive collaboration with NASA definitely opened doors for Scott-Pandorf. What began as an internship became a permanent position shortly after her graduation from UH.

Her advice: “When you come into your graduate program, don’t already have everything planned out and think this is what you’re going to do. Be open to the possibility of many other things.” ■

We want to spotlight our alumni in the newsletter, so let us know what you are doing at <http://hhp.uh.edu/alumni>.

HHP Researcher Examines Exercise and the Immune System

► Common colds and flu account for millions of hours of lost work and school time each year. HHP Associate Professor Brian McFarlin is studying how exercise stresses the body and compromises the body's immune system, increasing susceptibility to infection and illness. He collected data from marathon runners participating in the Austin LIVESTRONG Marathon Feb. 20.

"The stress that running a marathon places on the body makes the runner susceptible to upper respiratory illnesses, colds and flu," McFarlin said. "We want to know if there is a supplement runners can take to shore up their immune system following such a strenuous event."

McFarlin recruited approximately 400 runners at the Austin LIVESTRONG Marathon Health Expo and Packet Pick Up, Feb. 18 and 19, which was held at the Palmer Events Center.

Following the event, runners were given either the Biothera supplement Wellmune WGP or a placebo. For four weeks after the marathon, each participant will fill out a daily survey to rate their perception of their health and wellness. With those surveys, McFarlin and his research team will evaluate the effectiveness of the supplement.

Biothera (<http://biothera.com>), a U.S. immune health company, commissioned the research.

"Health care is a big concern for people," he said. "Staying home from work or school has consequences, as does going to work

while being sick. Our findings may help other recreational athletes or those who work outdoors in extreme weather conditions."

McFarlin works in the HHP Laboratory of Integrated Physiology and has been researching exercise and the immune system for more than a decade. He has published more than 40 studies in peer-reviewed journals documenting how exercise disrupts the immune system function. ■

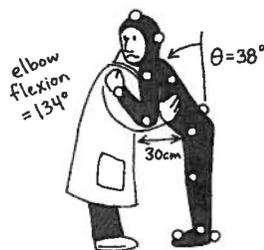
- Marisa Ramirez



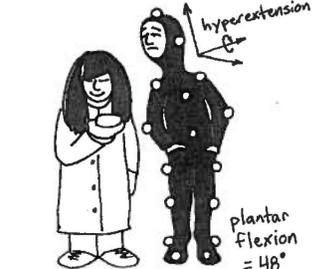
Team McFarlin at the Austin LIVESTRONG marathon:
Sitting: Whitney Breslin, Kelley Strohacker, Tanya Halliday.
Standing: Dr. McFarlin, Courtney Eason, Katie Carpenter, Tiffany Davidson.

THE BIOMECHANICS OF AWKWARD SITUATIONS

HUGGING SOMEONE YOU DON'T LIKE



READING A STRANGER'S TEXT MESSAGES



RESPONDING TO AN IGNORANT COMMENT



Contributed by Dr. Adam Thrasher,
assistant professor of biomedical engineering.

Free Lecture Series

► You are invited to hear renowned NASA scientists speak in the Ground-Based Space Flight Models course, which is a component of HHP's Space Life Sciences curriculum.

You may attend all the free lectures that interest you on Wednesdays from 2:30-5:30 p.m. in the conference room (104L) of the Garrison Gym.

For more information and a schedule, visit <http://tiny.cc/Spaceflight-Models>. ■



Visit HHP Current Events
at <http://hhp.uh.edu/Currentevents>

Visit our exciting research projects at <http://hhp.uh.edu/grants>.



<http://hhp.uh.edu>   

Join CFF's Great Strides Walk

► One of the many ways HHP promotes health in the UH community is by hosting the Cystic Fibrosis Foundation's (CFF) annual Great Strides 3K walk on the UH campus. This year's event is scheduled for May 21.

Family and friends, neighborhood residents, community clubs and organizations are encouraged to walk together. For more information and to register for the event, visit CFF's Web site at www.cff.org/Great_Strides.

Last year's walk drew 900 participants and raised more than \$830,000 to help find a cure for CF, which affects the lungs and digestive system of about 30,000 children and adults in the U.S.



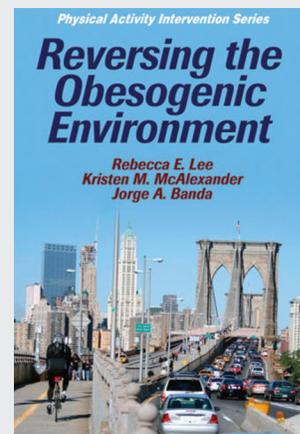
Great Strides walkers cross the finish line on the UH campus.

New Book Confronts Obesity

► Obesity is a documented global crisis. A new book by leading researchers asks, "But, what if you live in an obesogenic environment—a neighborhood where fresh vegetables are not available and opportunities for physical activity are hard to find?"

In their book, *Reversing the Obesogenic Environment*, Rebecca Lee, Kristen McAlexander and Jorge Banda introduce the concept of an obesogenic environment and explore ways that changing one's environment can encourage healthier choices.

Practical recommendations are provided based on the latest research. Sample programs and policies, checklists and potential solutions offer readers a beginning point for lifestyle changes in their own communities.



Dr. Lee is director of the Texas Obesity Research Center and an HHP professor. Dr. McAlexander (Ph.D. '10) is a lecturer in applied physiology and wellness at Southern Methodist University in Dallas, Texas. Jorge Banda ('04, M.S. '07) is a doctoral candidate in exercise science and a research assistant at the University of South Carolina.

Pre-order: <http://tiny.cc/ROE-book>.