We Need Your Support!

Our goal is to create a world in which older adults enjoy the highest level of well-being, through innovative science, interprofessional collaborations, and community partnerships. Our work seeks to transform the care of older adults in San Diego and beyond and improve their quality of life. Your support enables us to fund innovative pilot projects, create interprofessional local and global working groups, conduct important community projects, and host conferences, as well as those in professional fields, as well as the public.

Here are some examples of our projects:

- Training for students and health-care professionals
- Research on technology for older adults
- Intergenerational housing and activities
- Making San Diego more age friendly

How to Give

If you would like to make a contribution to the Center for Healthy Aging and the Stein Institute, there are three ways to give:

- **ONLINE**
  
  Please visit aging.ucsd.edu and click on “Giving.”

- **BY PHONE OR EMAIL**
  
  Please call Danielle Gimenez, LCSW, at (858) 246-0767 or email dgimenez@ucsd.edu.

- **BY MAIL**
  
  Please make your check payable to University of California San Diego Health Sciences Department and write Stein Institute or the Center for Healthy Aging.

Mail your gift to the address below:

University of California San Diego
Health Sciences Department
Sam and Rose Stein Institute for Research on Aging
200 W. Arbor Dr. # 8982
San Diego, CA 92103-8982

NASA Twins Study Provides a Multimetrics View of the Human Body’s Response to a Year in Space

BY JACKIE CARR

As part of the unprecedented NASA Twins Study, researchers at UC San Diego School of Medicine and the Stein Institute for Research on Aging examined how long-term space flight affects the regulation of proteins and metabolites in the body and the implications for cardiovascular health and vision, both during and after space travel.

The NASA Twins Study is the most comprehensive integrated multimetrics, molecular, physiological, and behavioral analysis of how the human body responds to space flight, by simultaneously studying the astronaut’s identical twin brother who served as our “ground control,” we captured an integrated view of the molecular, behavioral, and physiological changes experienced by a middle-aged man on Earth over a two-year period,” said Dr. Rana.

The study consisted of ten teams of investigators around the nation who have been observing and assessing identical twin astronauts, Scott and Mark Kelly. Scott Kelly flew aboard the International Space Station (ISS) for 342 days in 2015 and 2016 while his identical twin brother, Mark Kelly, remained on Earth.

“A primary issue that astronauts have in space is Space-Associated Neuro-ocular Syndrome, or SANS,” said Dr. Rana. “Many astronauts develop SANS-related vision impairment that may be the result of multiple hits on the vascular system involving microgravity-related fluid shifts, environmental changes, and possibly a genetic predisposition.”

“Cardiovascular changes akin to atherosclerosis have also been observed in astronauts after a long duration flight,” said Dr. Rana. “Both SANS and cardiovascular issues are major physiological hurdles that NASA wants to address before they can embark on longer spaceflight missions, such as the proposed mission to Mars in the 2030s.”

Dr. Rana’s co-investigators at the Johnson Space Center in Houston and Alan Jargens at UC San Diego conducted physiological measures aimed at capturing the development of SANS and cardiovascular changes due to space flight. In parallel with the physiological studies, Dr. Rana’s team, consisting of Jamila Siamwala, Hemal Patel, Michael Ziegler, Vivian Hook, Dorothy Sears, Kumar Sharma, and Manjula Dandar, conducted metabolomics, proteomics, and mitochondrial function analyses.

The Twins Study investigators coordinated sample collection and transport from the ISS and also collected samples in Russia when Scott Kelly returned to Earth via the Russian Soyuz spacecraft.

“The challenge was to collect enough blood and urine samples onboard the ISS at multiple time points throughout the year for all ten investigative teams to conduct this comprehensive omics view of the human body in space,” said Dr. Rana. “Blood volume drops in space and the astronauts are chronically dehydrated. These factors add to the difficulty of obtaining samples in space. Our study established protocols for collecting and transporting samples for future multimetrics studies on astronauts.”

The physiological and omics data were integrated with that of the other nine investigators.
This Month’s Successful Ager: Jeanne Socrates

BY MAJA GAWORDNSKA

Resilience is one of the keys to successful aging. Jeanne Socrates, who is currently sailing solo and unassisted aboard S/V Nereida somewhere near Australia and New Zealand, knows a lot about resilience.

Socrates first attempted to depart on this journey in 2016, but two bouts of stormy weather caused damage to her sailboat. The first time required a return to Victoria for repairs and the next time forced Socrates to pull into San Diego. She was set to rest in 2017, but she suffered a fall from a ladder just a week before her planned departure and broke a few bones. Determined not to give up, she finally departed in October 2018.

“I expect to be at sea for around seven to eight months nonstop, hoping to get safely around the Five Great Capes of the Southern Ocean and back to my starting point without any outside help and without using my motor which will be sealed,” said Socrates.

This is her fourth solo circumnavigation and hopefully her second successful nonstop. When she finishes, she’ll become the oldest person (among both men and women) to have sailed around the world nonstop, solo and unassisted.

“If any problems arise (and they usually do!), I’ll have to deal with them using tools and spares I’ll carry onboard…and all food for my time at sea will need to be with me from the start of my journey—fresh eggs turned daily should last several months, onions and potatoes most of the time, and I’ll also have canned and dried foods,” said Socrates. “Drinking water will come from a water maker (desalination) work- ing off my batteries, and I’ll have long-life milk and fruit juices as ballast! My batteries will be mainly powered by the sun and the wind, with a backup generator to help on windless, overcast days and/or when I’ve used the radio a lot.”

Socrates is in her late seventies and has already been recognized by Guinness World Records and nautical associations, like the Cruising Club of America, as the oldest woman to circumnavigate the globe in a nonstop, solo, unassisted sailing trip. She completed the trip in 2013, Victoria to Victoria in 258 days. This still wasn’t good enough for this indomitable sailor. Her dream is to hold the record.

A grandmother, retired teacher, and volunteer for programs that provides free home nursing for terminally ill cancer patients, Socrates took up sailing when she was forty-eight years old for the Cruising Club of America, as the oldest woman to have sailed around the world nonstop, solo and unassisted in 258 days. This still wasn’t good enough for this indomitable sailor. Her dream is to hold the record.

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Every gift makes a difference. Small gifts, even $10, can help advance cutting-edge research in ways that can achieve big results. A special gift to support a particular program helps us to move our mission forward. Please join our efforts today by supporting our programs with a charitable gift.

$25,000 funds one issue of HealthDay.

$10,000 funds a research project for a postdoctoral fellow.

$5,000 supports a graduate student for one quarter.

$3,000 funds the filming of one public service announcement.

$2,500 funds one issue of our newsletter.

$500 supports twenty-five participants in our successful aging study.

$350 funds a high school student for a week, including a stipend and all supplies.

**NEWS AND HIGHLIGHTS**

- We are gearing up for a busy summer with eight high school students and eighteen medical student volunteers from all over the country who will work with our fac- ulty mentors on deciphering the science of aging.

- In June, Dr. Jeste will give Grand Rounds at the University of California, Irvine.

- Our researchers are looking for study par- ticipants. Please visit aging.ucsd.edu and look for the “Research” tab to learn more about new studies.