

NASA researcher lands at Stephens Memorial Hospital

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By Nicole Carter Advertiser Democrat

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NORWAY — Stargazing is a precious childhood memory for Stephens Memorial Hospital's new hospitalist, Dr. Heidi DeBlock. When she was young she spent evenings with her father looking up at the night skies, learning everything she could about astronomy.

DeBlock lost her father when she was 15. Little did she know then that the love of the universe they shared would put her on a career path combining critical care medicine, cardiovascular physiology and a 30-year tenure conducting research at NASA.

"After my father died, I needed to work to help out," DeBlock said during a break from her busy schedule at the hospital. "Our next-door neighbor was a doctor and he got me a job at a hospital reading EKGs. That's how I put myself through high school and college, as an EKG technician.

"When I went to college, I studied astrophysics as an undergraduate at the University of Rochester. It's the study of physics as it pertains to space, the stars and universe, and how it all works. It was fascinating and incredibly challenging. But I found myself more drawn to medicine."

Having completed her bachelor's degree, DeBlock took a little time away from school, working in a physics lab and a hospital. Eventually she heeded the call to medicine and enrolled in medical school, where she met a researcher on sabbatical from NASA's cardiovascular physiology lab at Johnston Space Center in Houston.

"I told her about my background in astrophysics and how I'd always wanted to work at NASA," DeBlock said. "She offered to put me in touch with the person who ran her lab. I ended up down there on an elective during my fourth year of medical school. I thought I'd died and gone to heaven. I worked in the cardiovascular physiology lab and was assigned to a project right up my alley — reading EKGs and heart monitoring tests. Everything just clicked. There was a shuttle mission running while I was there. I learned a ton, finished my project early and volunteered for more. They said, 'we've got plenty for you to do!'"

With the support of her residency and fellowship directors, DeBlock was able to extend her work at NASA in Houston for up to a month at a time. In 1995 she completed her medical training and took a position at Albany Medical Center as an intensivist in the surgical and neurosciences intensive care units, and eventually an associate professor of surgery.

She was also able to continue with NASA, becoming an investigator on a very large project at Kennedy Space Center in Florida. She was involved with shuttle landings until 2003, when the Columbia disaster shut down space missions for more than two years.

“At NASA, we always look to the next mission,” DeBlock said. “When NASA was building the International Space Station, our research focused on safety for space walks, for understanding the changes in cardiovascular systems during long duration orbits.

“The next thing we’re focused on is Mars,” she said. “There is no directive from the U.S. government yet, but NASA has to be ready. The current plan is to get back to the moon as a learning experience for building a habitat on Mars, a three-year mission.”

Research for Mars focuses on its thin atmosphere and less gravity than on Earth.

“We can’t breathe on Mars,” DeBlock said. “We’ll need full environmental systems just like we do when we go to the moon. We need to provide oxygen, water. How are we going to get the food there? Protect ourselves from solar radiation? If we’re going to put humans there we have to understand our physiology very well to make it safe to get there and return.”

As a NASA researcher, DeBlock has worked with pretty much every astronaut who has flown in the past thirty years. While her research has been published in scholarly journals and presented at internationally attended human research project meetings in Houston, details surrounding individuals remain confidential. Some people get covered in the news, like well-known astronaut Scott Kelly, who spent almost a year on the ISS and returned to Earth taller than his twin brother, Mark.

“They are still identical,” DeBlock quipped. “Scott grew in space but he will return to his original size over time.”

She also studied John Glenn’s 1998 foray back into space at 77 years old. His cardiovascular function was quite different than his 42-year-old counterparts.

In DeBlock’s NASA experience a couple of incidents stand out. In one, she struck up an acquaintance with the person responsible for overseeing the moon rocks collected during Neil Armstrong’s and Buzz Aldren’s trip to the moon and scored an invitation to “tour” the rocks.



Dr. Heidi DeBlock, Stephens Memorial Hospital’s new critical care physician who splits her time in medicine with research at NASA.

Submitted photo

The second came as a witness to a scrapped launch in 1992 or 1993.

“My husband, Scott, came to watch the launch with me,” she recalled. “We were in a packed conference room. Only two of the three engines ignited; if an engine is milliseconds off, it shuts itself down. You could have heard a pin drop. I swear, everyone just stopped breathing.

“After a tense few moments, mission control figured out the issue and let the astronauts know the risk level,” she said. “Level 10, you’re about to blow up. Level one, it’s OK, it’s calm and we’ll get you out. Mission control determined this as level three, due to the fuel present. At that point, everyone started breathing again and I was struck by the risk, the lives invested in that one moment. My husband and I both realized just how much is involved with making space travel safe, making the technology happen, the humans it takes to make it happen. I didn’t consider it in such a way until that moment.”

Here in Maine, far away from the NASA machine, DeBlock still returns to her childhood passion — watching the stars. And she watches her research subjects, too.

“The (International Space Station) is a couple hundred miles up, and you can see it with your naked eye,” DeBlock said. “It orbits the earth at 17,500 mph, day and night changes every 90 minutes or so.

“You can track the (station), which is a lot of fun,” she said. “They have an app at NASA.gov, the ISS tracker. Type ‘Portland, ME’ in the tracker and it will tell you where it will come into view on the horizon, for how long, and what its altitude will be. It’s large in that it’s bright. It will be way higher than a plane and a much faster speed.”

DeBlock and her husband often watch for the station.

“If you go out on a good dark night and watch the sky you’ll start to see all sorts of satellites,” she said. “They won’t be as bright as (the station), which is the size of a football field. You can also see space garbage flying by. If you just start training your eye to look for these things it’ll start popping out.”

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