In Good Company

Reaching for the Stars: Michael Barratt's chance to walk the (space)walk

Physicians tend to be passionate about their profession, but Michael Barratt, M.D., has taken efforts to master his specialty to new heights. A 1991 graduate of the medical school's Aerospace Medicine Residency Program, Barratt has become his own research subject in an orbiting laboratory nearly 200 miles above the Earth.

On March 26, Barratt, who is now a NASA astronaut, lifted off from the Baikonur Cosmodrome in Kazakhstan aboard a Russian Soyuz TMA-14 spacecraft bound for the International Space Station (ISS). As a flight engineer for ISS Expeditions 19 and 20, Barratt will remain on the station for nearly six months, with a planned return to Earth on October 11.

"As a space medicine specialist," Barratt said, "I spent long years studying space medicine, teaching it to various people—including to astronauts who were about to fly. I'm formally trained, obviously, starting at Wright State and finishing at NASA, but to get this experience to add to that formal training, I think, is really going to be great. That's one of the big things I'm looking forward to."

During his time on the ISS, Barratt will oversee many science investigations, contribute to daily station operations, and conduct two spacewalks to prepare for the addition of a new Russian docking module. According to NASA, during Expedition 20 the station will be visited by the Space Shuttle twice, by two Russian Progress resupply vehicles, and by a new cargo ship, the Japanese H-II Transfer Vehicle (HTV-1).

Wright State—Launch pad for a stellar career

Unlike many astronauts, Barratt hasn't cherished the thought of space travel as a lifelong dream. A passion for science led him to earn a B.S. in zoology from the University of Washington, where he met and married his wife, Michelle. The couple would eventually settle in Houston and have five children (now between the ages of 8 and 20), but first they moved to Chicago, where both enrolled in medical school. After earning his M.D. from Northwestern University, Barratt became an internal medicine resident at Northwestern before serving as chief resident at Veterans Administration Lakeside Hospital.

Toward the end of his time in Chicago, Barratt's conversations with the Aerospace Medicine Residency Program director at Wright State, "really got me hooked on the whole space medicine thing," he said. "It's just the most interesting thing I can think of. It's brand-new physiology. It's research. It's operational. It's amazing."

While a resident with the program, Barratt conducted research on human performance through underwater testing of a new concept for an EVA (Extra-Vehicular Activity) enclosure.

"For not being at NASA at the time," Barratt said, "I had an incredible capability, between Wright State and Wright-Patterson Air Force Base, to study this, and the data was useful at JSC (Johnson Space Center) as well.

"That's one of the great things about Wright State. People are used to doing that kind of stuff, and with Wright-Patterson there, they're all about optimizing human performance in strange environments like flight environments, so it was not that difficult to do."

"The academic background that I got at Wright State was a huge thing," Barratt added. "That just makes a big difference."

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Many of Barratt's fellow graduates are now playing important roles in space programs around the world, and he remains in contact with several as both friends and colleagues. During his mission, he is collaborating with a program graduate based in Brazil, and two others attended his launch. Ed Powers, M.D., one of Barratt's closest friends since they met as residents two decades ago, is serving as NASA's flight surgeon for Expeditions 19 and 20.

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Even 20 years after entering the program, Barratt said, "It's a pretty tight community that came out of that residency group."

From Dayton to Moscow via Houston

After completing his aerospace medicine residency, Barratt worked for NASA at the JSC in Houston on the Space Station Freedom project. Two years later, in 1993, he became one of the first Americans to attend the landing of a Soyuz spacecraft, and he spent the next several years supporting the new joint U.S./Russian Shuttle-Mir project.

Barratt considers his involvement in bringing together the two space programs "one of the most exciting things I've ever done."

"Space medicine is kind of a small field anyway," he said. "Then, all of a sudden, we got this new set of colleagues that we didn't have access to at all before. So the community more than doubled in size. That was just an incredible pleasure."

In a similar way, Barratt has enjoyed seeing the international space program grow and connect people and organizations around the globe. In fact, his mission will be the first to include representatives from all five partner agencies of the ISS: the U.S., Russia, Canada, Europe, and Japan. Expedition 20, which began with the arrival of three new crew members in late May, also marked the first time the station became home to a full, six-person crew.

"To me, that's incredible," Barratt said. "I drew the long straw on this one. Going to a six-person crew is a really big thing. It's how we're going to get the productivity out of the station that it was really designed to support."

A long countdown to liftoff

Barratt's work with the Shuttle-Mir program inspired him to give the idea of becoming an astronaut a little more thought, again driven by an abiding fascination with the medical aspects of spaceflight.

To live and work on a space station, Barratt said, "you're looking at full adaptation to zero-G. If you look at the big scheme of human spaceflight, we want to go to Mars, and we want to go a lot further, and it's going to involve a long period in zero gravity. It's essentially how we're going to get somewhere outside of low Earth orbit."

Even as he considered this new path, Barratt served as medical operations lead for the ISS from 1995 to 1998. He then acted as lead crew surgeon for the first expedition crew until he was selected, along with 16 other candidates, as a member of the NASA Astronaut Class of 2000.

After beginning his astronaut training, Barratt would have to wait nearly nine years for his first chance to travel into space. However, the delay didn't bother him a bit.

"I'm sort of taking the longest route up there," he admitted, "but in turn I get, I think, the best mission, because it's good and long. I have piloting duties, I have EVA duties. I have robotics duties. For all the time I've waited, I've actually trained in most everything that makes space flight really interesting, so I have no problem with the time it took."

A bright future for spaceflight and humanity

Taking the long view has also helped Barratt to take the inevitable challenges in stride—including the occasional global crisis, such as the current economic turmoil. After all, he points out, the field of space exploration has weathered worse difficulties over the years.

When he arrived in Russia in 1993, Barratt said, "there was no food on the shelves, and my colleagues hadn't been paid for months. It was like that for quite a while, for at least a couple of years. These guys went for months at a time just kind of living on home-grown produce and the barter system, and yet they kept their space station afloat. It was the pride, and it was just their lives. It was the right thing to do.

"A couple of weeks after I left here once" during those early years, he added, "there were tanks on the bridge over the Moscow River, shelling the White House (a Russian government building). We built that whole [Shuttle-Mir] program in circumstances much, much worse than now."

The space program will and should remain a priority, Barratt also feels, because "it is an international program with an incredibly positive agenda."

In terms of the full scope of human history, he added, "expanding off the planet, that's an absolute eventuality. Economic crises and political events might delay things or accelerate things by a few years here and there, but in the big scheme of things, they're really tiny blips on a great big curve.

"I have no doubt we'll be going [back] to the moon and further," Barratt said, "and it's just a matter of when."VS

Barratt's home away from home for six months: the International Space Station, orbiting the planet at an altitude of nearly 200 miles. Photo courtesy of NASA