# Microbe growth to be examined at International Space Station

March 11 2014


Project MERCCURI is a citizen science collaboration between UC Davis, Science Cheerleader and SciStarter.com. Credit: Project MERCCURI

Microbes collected across the country will soon blast into orbit for research and a microgravity growth competition on the International

Space Station (ISS). This citizen science research, known as Project MERCCURI, investigates how microbes from different places on Earth compare to each other and to those found on the International Space Station.

Led by the Science Cheerleaders (current and former NFL and NBA cheerleaders pursuing science and technology careers), thousands of people across the United States participated in the project. Several Pop Warner cheer teams swabbed practice fields, shoes, and cell phones for microbes. Other people collected microbial samples at NFL, NBA, and MLB stadiums; from schools; from landmarks like the Liberty Bell, Sue the T-Rex, the statue of Ben Franklin in Philadelphia, and the Smithsonian Air and Space Museum; and during events including Yuri's Nights, a series of gatherings across the country to commemorate the first human in space.

The microbes they gathered were examined by the "microbiology team" in the laboratory of Dr. Jonathan Eisen at the University of California at Davis. The team selected 48 microbes, which, with approval from NASA, are to ride the SpaceX Falcon 9 to the Space Station for further research. The rocket is scheduled to launch from the Kennedy Space Center on March 16, 2014.

The public will be able to follow Project MERCCURI as it continues over the next several months via the web site SpaceMicrobes.org. The site will include updates from the research on the Space Station including results of the "microbial playoffs" growth competition. The site also features free interactive visualization tools, lesson plans for teachers, and even trading cards that include photos and the details of each microbe selected for the project, as well as their importance.

In addition to the research in space, thousands of additional samples from cell phones and shoes that were collected by the public are being

analyzed further at UC Davis and by the lab of Dr. Jack Gilbert at Argonne National Laboratory. The microbes found in these samples are being assayed using DNA sequencing technology, and the resulting data will be made available to the public and also integrated with results of the Earth Microbiome Project. Scientists hope to gain insights into what is living at the ISS, how microbes vary between different places on Earth and in space, and to compare growth of microbes on Earth and in microgravity.

"We are in the midst of a revolution in our ability to study the hidden world of microbes found throughout the planet," said Dr. Jonathan Eisen, Professor at UC Davis and leader of the microBEnet (microbiology of the built environment network) team doing the microbiology side of Project MERCCURI. "One area of growing interest is in studying the microbes living right around us – in our buildings – on our phones – and elsewhere. The Science Cheerleader group has allowed us to get thousands of people to not only think more about the microbes among us, but to also participate in a microbial diversity research project. And those people have helped us get more samples than we have been able to obtain previously."

"A lot of people ask us *why* we're sending microbes into space," said Dr. David Coil, a microbiologist at UC Davis. "Understanding how microbes behave in microgravity is critically important for planning long-term manned spaceflight but also has the possibility of giving us new insight into how these microbes behave in built environments on Earth."

Regarding research being conducted on thousands of microbes here on Earth at Argonne National Laboratory, Dr. Jack Gilbert said, "Shoes and phones are ubiquitous components of our lives. They are also influenced differently during our daily routines: phones are interacting with the skin of the hands and face, while shoes track through the environments experienced during the day. Therefore each of these surfaces can help us

answer questions about the microbial influences in our lives."

"This initiative is not just about significant research," said Darlene Cavalier, Founder of Science Cheerleader and SciStarter. "It's about engaging the public in that research. Microbes that they collected are taking a ride on the International Space Station. They're the subject of research by microbiologists and astronauts. We hope that inspires youngsters as well as adults to become more aware of and involved in science."

Project MERCCURI is coordinated by Science Cheerleader, SciStarter.com, and UC Davis, in conjunction with the Argonne National Laboratory. The Project is made possible by Space Florida, NanoRacks, and the Alfred P. Sloan Foundation.

Provided by Project MERCCURI

Citation: Microbe growth to be examined at International Space Station (2014, March 11) retrieved 22 September 2024 from
https://phys.org/news/2014-03-microbe-growth-international-space-station.html