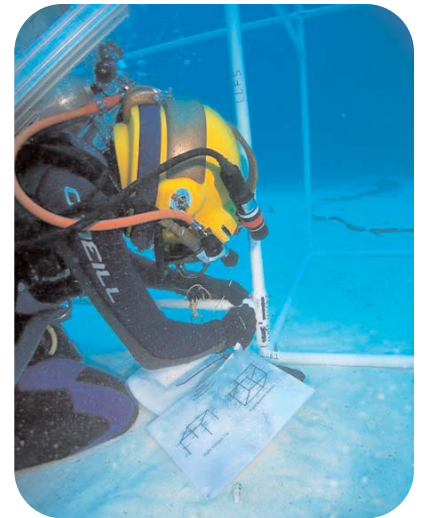


NEEMO 12



May 7-18, 2007, the 12th mission of NASA Extreme Environment Mission Operations (NEEMO) will take place in the Aquarius habitat off the coast of Key Largo, Florida. Aquarius is owned by the National Oceanic and Atmospheric Administration (NOAA) and operated by the University of North Carolina at Wilmington's National Undersea Research Center (NURC). Aquarius is a 45-foot-long, 13-foot-diameter habitat that rests 62 feet underwater in the Florida Keys National Marine Sanctuary. During NEEMO missions, astronauts and researchers live underwater for many days at a time and conduct valuable research that will help astronauts explore the moon and Mars in the upcoming decades.

The NEEMO 12 crew features two NASA astronauts, a NASA physician, a surgeon from the University of Cincinnati, and two NOAA/NURC habitat technicians. These aquanauts will live underwater for 12 days, conducting a variety of advanced medical technology experiments, including robotic telesurgery. Using two remotely controlled surgical robots, school children and scientists in Cincinnati and Nashville will be able to control the robotic arms of these robots in the submerged Aquarius habitat. The two remotely-controlled surgical robots are known as the Raven from the University of Washington and the M-7 from SRI International. In addition to hands on telesurgery demonstrations, robotic telesurgery technology developed and refined within this mission will help surgeons overcome interplanetary communication lag time. Technologies such as surgeon-guided automatic robot function could improve the care of astronauts on future lunar missions.



The Team

The NEEMO 12 crew features NASA astronaut Heidemarie Stefanyshyn-Piper; NASA astronaut Jose Hernandez; NASA flight surgeon Josef Schmid, MD; University of Cincinnati surgeon Timothy Broderick, MD; NURC habtech James Talacek; and NURC habtech Dominic Landucci. NASA astronaut Richard Arnold and NASA flight surgeon Sean Roden will serve as back-up crewmembers.

Education and Outreach

NEEMO 12 offers a wonderful opportunity for children to learn more about space, nature, science, engineering, and medicine. Local Cincinnati outreach includes a partnership with the Cincinnati Museum Center on May 9, 2007. These activities will be emceed by a NASA astronaut.

During a morning session, 300 elementary school students (grades 1-5) and their teachers are invited to tour the Museum Center and participate in a live video teleconference with the NEEMO 12 crew in the Aquarius habitat. The crew will provide a video tour of the habitat, highlight some of their research and take questions from students.



An afternoon video teleconference is open to the general public and will feature five local junior high (grades 6-8) school students. These “student-surgeons” will drive the robotic controls at Cincinnati Museum Center, telesurgically moving the arms of the robot in the undersea habitat.



Classes of students will visit the University of Cincinnati’s Center for Surgical Innovation lab prior to the May 9 event, where they will experience surgical simulation and robotic surgical training. Students will speak with surgeons, biomedical engineers, and telemedicine researchers for a taste of possible future careers. About 200-300 students, teachers and family members are likely to attend/participate.

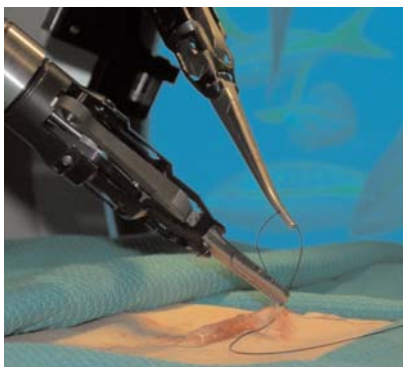
Additional distance learning opportunities throughout the mission are made available to thousands of schools across the country through NASA’s digital learning network.

In all outreach activities, students will see first hand what it is like to live in such an extreme environment and how surgical robotics can be used to support surgery in the future.

NEEMO 12 Partners

NEEMO could not happen without the help of many organizations. This mission is a collaborative effort between:

- National Aeronautics and Space Administration (NASA)
- National Oceanic and Atmospheric Administration (NOAA)
- US Army’s Telemedicine and Advanced Technology Research Center (TATRC)
- National Space Biomedical Research Institute
- University of Cincinnati – Advanced Center for Telemedicine and Surgical Innovation (ACTSI) and UC Surgeons, Inc.
- University of North Carolina at Wilmington.
- University of Washington
- SRI International
- HaiVision



For additional information on previous NEEMO missions, including NEEMO 7 and NEEMO 9 which were also focused on telemedicine and surgical robotic experiments, visit www.nasa.gov/mission_pages/NEEMO/index.html.

For more information about NEEMO 12 partnerships, please contact Mr. Charles Doarn, Deputy Director, at the UC Advanced Center for Telemedicine and Surgical Innovation, 513-558-6548 or Charles.Doarn@uc.edu.