

DSU Receives \$5 million NASA research grant

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Delaware State University has been awarded a \$5 million research grant from the National Aeronautics and Space Administration (NASA) to establish a NASA-URC Center for Applied Optics for Space Science (CAOSS) on campus.



Graduate optics student Alissa Mezzacappa speaks about her excitement about being involved with the research the NASA grant will fund. Standing with her are doctoral optics student Maurice Smith and Dr. Nouredine Melikechi, the principal investigator of the research grant.

Photo by Sarah Robertson

The grant was announced today during a media event on campus in which DSU Acting President Claibourne D. Smith was joined by Delaware Gov. Jack Markell and Dr. Nouredine Melikechi, the research grant's principal investigator, in celebrating the achievement.

CAOSS will foster new NASA-related developments based on optical sciences and technology as well as enhance the national aerospace science and technology workforce. The new center will also develop partnerships with industry, NASA research centers, federal laboratories, and minority and non minority-serving colleges and universities.

The CAOSS will also inspire and engage students from underrepresented groups in science, technology, engineering and mathematics fields. The research center will work in conjunction with an established optics research center, the Center for Research and Education in Optical Sciences and Applications (CREOSA), which will be funded through the National Science Foundation-Center for Research Excellence in Science and Technology program. The two centers will be merged within one year to become the Optical Science Center for Applied Research (OSCAR).

"Since 1997, the University's optics faculty has been steadily developing the capability and infrastructure to take on more and more complex research projects," said Dr. Smith said. "Today's announcement of another \$5 million research grant reflects that America has a sound confidence in our optics scientists."

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The principal investigator is Dr. Noureddine Melikechi, interim dean of the College of Mathematics, Natural Sciences and Technology, as well as the chair of the Department of Physics. Dr. Melikechi, who first arrived at DSU in 1995, was the founder and director of both the University's first Applied Optics Center in 1997 and later CREOSA in 2006.

The newly established research center will initiate research programs in Planetary Science, Space Communications & Navigation, and Astrobiology. The proposed projects will support the goals of NASA's Exploration Systems Mission Directorate, the Science Mission Directorate and the Space Operations Mission Directorate.

The projects will include the development of optical instrumentations for space operations infrastructure, such as space atomic clock and optical gyroscope, polarimetric laser detection and ranging, and an augmented reality visor interface for human-robot interactions and emergency medical support of astronauts.

"CAOSS will also be involved with Mars exploration through its research and development of the ChemCam Mars Rover LIBS instrument and a remotely-operated laser scanning confocal microscope for analysis of extraterrestrial environment," said Dr. Melikechi."

The center will collaborate with Goddard Space Flight Center, NASA/NSSTC Astrobiology Laboratory, the Jet Propulsion Laboratory, Los Alamos National Laboratory, Northwestern University, Juxtopia®, Vassar College and the Delaware Aerospace Education Foundation on various projects.

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