DSU CREOSA Awarded NSF Optics Research Grant

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The National Science Foundation?s Center for Research Excellence in Science and Technology has awarded Delaware State University a five-year $5 million grant in support of DSU?s Optics Program.

DSU officials formally announced the grant at a Sept. 27 media event held in the University?s Administration Building.

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Dr. Noureddine Melikechi, founding director of DSU's Optics Program, said this grant will help the University produce the next generation of optical scientist, many of whom will come from underrepresented minority groups.

The grant represents the NSF?s validation and financial renewal of DSU?s Center for Research Excellence in Optical Sciences and Applications (CREOSA) as a multidisciplinary program of research, education and outreach. The five-year grant will fund CREOSA?s phase II work that will build on the accomplishments it has achieved over the previous half-decade.

CREOSA has been instrumental in the prolific development of DSU?s Optics Program. Over the last five years, CREOSA has established master and doctoral optics programs (DSU is the only school among Historically Black College and Universities with a Ph.D. optics program), has helped lead to the graduation of a new generation of optical scientists mostly from minority groups underrepresented in the STEM (Science, Technology, Engineering and Mathematics) area, and assisted in the creation of a DSU culture of innovative integration to foster interdepartmental and multidisciplinary research and education.

Through this NSF funding, CREOSA will move to the next level of excellence and national prominence in research and education in the optical sciences, said Dr. Noureddine Melikechi, DSU?s dean of the College of Mathematics, Natural Sciences and Technology and the vice president of research. He added the funding is critical to the growth of the DSU Optics Program and allows it to reach a point where it can be sustained.

?This grant provides mechanisms to inspire, encourage and train the next generation of optical scientists, and in particular students from underrepresented groups.? Dr. Melikechi said. ?We will contribute to the growth of the ever growing field of optics by performing cutting-edge research that has the potential for profound impact on human health through the development of novel nano-opto medical technologies that can be used to detect early signs of diseases.?

According to Dr. Melikechi, who is the founding director of the Optics Program (established in 1998), DSU optics scientists will focus on three interconnected areas during phase II:

- Spectroscopy and imaging of biomacromolecules in crowded and complex media.
- Spin polarization in nanodiamond for nanoscale sensing and imaging.
- Interactive data mining in experimental optics.

DSU President Harry L. Williams said the University is proud of the accomplishments of its

Optics Program.

?Our Optics Program has truly taken on a profound life of its own, and this grant validates all the work that has led to its research accomplishments, collaborations with NASA on the current Mars mission, state funding support for a new optics research facility on campus, and many other achievements,? Dr. Williams said. ?This communicates to DSU and the world that the National Science Foundation approves of our direction in optics and wants to see it continued.?

With the support of Delaware?s Congressional Delegation ? who were all in attendance at the Sept. 27 media event ? administration officials at DSU were able to secure funding to continue this cutting edge program.

?I am proud of DSU for receiving this funding, which will help to prepare a diverse student population to meet the global, scientific and technological challenges of tomorrow,? said U.S. Senator Tom Carper, who along with Sen. Coons and Congressman Carney, worked with the DSU on its application to the NSF. ?DSU?s Optics program is vitally important because it is helping transform the university into a premier research institution.?

U.S. Sen. Chris Coons noted that the advanced research such as that which is taking place at DSU is helping to fuel innovative new business and create the next generation of manufacturing jobs.

?DSU's global ? interplanetary ? leadership in the field of optics is on display right now aboard NASA?s Curiosity rover on Mars,? Sen. Coons said. ?This National Science Foundation grant will help DSU?s innovative research continue to inspire the next generation of scientists and expand the potential for this fascinating field of study.?

U.S. Rep. John Carney noted that in just a few short years, Delaware State University has developed a world-class optics research center that has already accomplished a great deal. The congressman said that he is looking forward to the seeing what the future holds for DSU?s Optics Program.

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Sen. Tom Carper chats with Dr. Renu Tripathi, assistant professor of optics.

"I'm excited that the funding announced today will continue the project well into the future. The Optics Center attracts some of the nation's best and brightest students, gives them unparalleled opportunities while in school, and prepares them for successful careers after graduation,? Rep. Carney said. ?It also strengthens the economy by creating jobs and adding more trained, qualified people to the workforce.?

The NSF grant is the latest in a line of funding support that the DSU Optics Program has attracted since its inception. Over the last six years, it has secured $23 million in federal funding. CREOSA was initially created in 2006 by a $5 million NSF grant. Three years later, the Optics Program received a $5 million NASA grant for the establishment of a Center for Applied Optics for Space Science (CAOSS) on campus.

In addition, last year the state of Delaware allocated $10 million toward the construction of a new optics research facility on campus. The University is currently in the design phase of that major capital project.

The two centers now operate under the University?s Optical Science Center for Applied Research (OSCAR).

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A group of optics faculty and students join Dr. Noureddine Melikechi for a celebratory photograph.

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