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NDSU Faculty Member Receives NSF CAREER Award

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Contact Information*Available for logged-in reporters only***Description**

Siva Jayaraman, (Siva), Ph.D., is the tenth North Dakota State University professor to receive a National Science Foundation CAREER award. The National Science Foundation has funded Siva's research proposal "Imprinting Molecular Chirality in Solution During Photo-Transformations."

Newswise — Sivaguru Jayaraman, (Siva) Ph.D., assistant professor of chemistry and molecular biology at North Dakota State University, Fargo, has been named a recipient of the Faculty Early Career Development award (CAREER) by the National Science Foundation. Dr. Siva will receive a five-year, \$575,000 award from the National Science Foundation (NSF) to conduct research outlined in his proposal titled "Imprinting Molecular Chirality in Solution During Photo-Transformations." This was Dr. Siva's first CAREER submission to NSF.

The National Science Foundation CAREER program recognizes and supports the early career-development activities of scholars who are likely to become the academic leaders of the 21st century. Recipients are chosen on the basis of creative career development plans that integrate research and education within the context of their university's mission.

"This is a highly-prestigious award that recognizes a faculty member's work and potential to become a leading national researcher," said NDSU President Joseph A. Chapman. "Through this award, the National Science Foundation has recognized the quality research conducted at NDSU."

The goal of Dr. Siva's research is to use environmentally-benign ways to synthesize chiral molecules and to understand the interaction of light with matter leading to stereoselective photo-transformations. The research program in Dr. Siva's group focuses on using light to transfer molecular chirality in photochemical reactions to produce molecules that are chiral (have two non-superimposable mirror images) and make only one of the two possible forms (a single enantiomer). Developing a family

Image Gallery



NDSU

Dr. Sivaguru Jayaraman, assistant professor of chemistry and molecular biology at North Dakota State University, Fargo, has received a National Science Foundation CAREER award for his proposal titled "Imprinting Molecular Chirality in Solution During Photo-Transformations."

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of stereoselective photoreactions is one of the most important problems faced by chemists, as controlling photo-reactivity leading to stereoselectivity has been traditionally a challenging task, according to Nicholas Turro, Ph.D., the William P. Schweitzer Professor of Chemistry at Columbia University, New York, N.Y. When developed, Dr. Siva's work could be applied to various light-induced transformations to the synthesis of a number of chiral molecules. Students trained during the course of this research will gain skills needed by the pharmaceutical industry, which now produces a number of single enantiomer compounds, according to Dr. Siva.

Dr. Siva's research plan integrates scientific research, educational training and public outreach. The research program will help train graduate and undergraduate students. As part of the outreach program, Dr. Siva has developed a program called PICNICS (Parents' Involvement in Children, Nurturing Intellectual Curiosity In Science). In a previous seminar, he brought together parents and high school students to learn about recent scientific advancements and their impact on everyday life. The PICNICS program is an excellent way to inform students and parents about science and technology, according to V. Ramamurthy, Ph.D., chair of the Department of Chemistry, University of Miami, Miami, Fla. The program also has an excellent chance to encourage and nurture young students to consider science as a career path, says Dr. Ramamurthy.

Dr. Siva joined the faculty at NDSU in August 2006. He completed a post-doctoral fellowship at Columbia University, New York, N.Y., after receiving his Ph.D. from Tulane University, New Orleans, La. He received his master's degree in chemistry from the Indian Institute of Technology, Madras, India, and completed his bachelor's degree in chemistry from St. Joseph's College, Trichy, India.

Since 1996, 10 young faculty members at NDSU have received prestigious National Science Foundation CAREER awards. "The continued national recognition of the scientific contributions made by researchers across many disciplines illustrates the depth of knowledge and continued growth of research programs at NDSU," said Philip Boudjouk, vice president for research, creative activities and technology transfer.

National Science Foundation CAREER awardees at NDSU over the past 10 years have received more than \$3.8 million in grants to conduct research in chemistry, civil and electrical engineering, coatings and polymeric materials. Previous NSF career awardees currently at NDSU include faculty members Gregory Cook, Seth Rasmussen and Wenfang Sun in chemistry, Sanku Mallik in pharmaceutical sciences and Kalpana Katti and Eakalak Kahn in civil engineering.

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