UC San Diego Engineering Professor Wins Guggenheim Fellowship

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A computer scientist and mathematician at the University of California, San Diego has been selected for one of the most prestigious fellowships awarded to scientists, artists and scholars in the U.S. and Canada. Russell Impagliazzo, professor of computer science and engineering at UCSD's Jacobs School of Engineering, was appointed a Guggenheim Fellow and cited for his work on "heuristics, proof complexity, and algorithmic techniques." "This is an important and prestigious award that Professor Impagliazzo richly deserves," said Mohan Paturi, chair of the Computer Science and Engineering department at UCSD. "The Guggenheim Fellowships are awarded to men and women who have already demonstrated exceptional capacity for productive scholarship, and that is a hallmark of Russell's work in complexity theory and cryptography."

The 80th annual fellowships from the John Simon Guggenheim Memorial Foundation total $6.9 million and were awarded this year to 185 artists, scholars, and scientists selected from over 3,200 applicants. Since 1925, the Foundation has granted more than $230 million in Fellowships to over 15,500 individuals.

Professor Impagliazzo specializes in computational complexity theory, notably the classification of so-called "hard" problems that require a prohibitive amount of time or resources to solve. His research areas include proof complexity, computational randomness, structural complexity as well as the theory and foundations of cryptography, in which he is focusing on methods to safely use less randomness. Although it is largely theoretical, Impagliazzo's work could lead to better encryption in "smart" cards and technologies to guarantee privacy to consumers.

Impagliazzo joined the UCSD faculty after receiving his Ph.D. in mathematics from UC Berkeley in 1989. In 2003, he received two awards for contributions to the theory of pseudo-randomness and cryptography: an Outstanding Paper Award from the Society of Industrial and Applied Mathematicians; and the Best Paper Award at STOC, the top theory-of-computing conference.

What distinguishes the Guggenheim Fellowship program from all others is the wide range in interest, age, geography, and institution of those it selects as it considers applications in 79 different fields from the natural sciences to the creative arts (except the performing arts). The fellowships are given on the basis of distinguished achievement in the past and exceptional promise for future accomplishment.

The new Fellows include writers, painters, sculptors, photographers, film makers, choreographers, physical and biological scientists, social scientists, and scholars in the humanities. Impagliazzo is the only UCSD faculty member honored with a Guggenheim Fellowship this year. Previous winners from UCSD included mathematician Ruth Williams (2001) and physicist Terence Hwa (1999). More recently, UCSD faculty selected for the award came from the Humanities: comparative literature professor Lisa Lowe (2003), as well as historian Takashi Fujitani and new media artist Lev Manovich (both in 2002).

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