

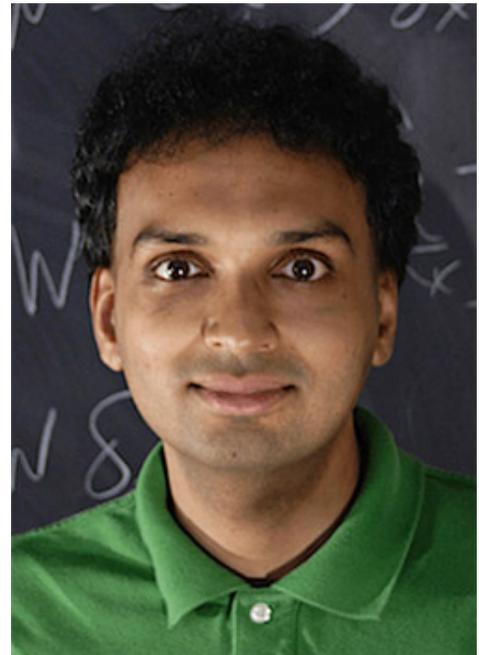
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Mathematician Awarded Guggenheim Fellowship

Kiran Kedlaya, professor of mathematics at UC San Diego, has won a Guggenheim Fellowship to further his work in number theory, one of the most classical branches of mathematics.

The award will support a project that explores computational aspects of the Langlands program, a grand unifying framework that incorporates much of the progress in number theory in the late 20th century. The Langlands program is not always completely precise in its predictions, however.

To address that shortcoming, Kedlaya will be leading a research program to develop new computational infrastructure for making and testing precise predictions in the context of the Langlands program at the Institute for Computational and Experimental Research in Mathematics in fall 2015. One guiding example will be the relationship between elliptic curves and modular forms which went into the proof of Fermat's Last Theorem in the 1990s, Kedlaya says.



Kiran Kedlaya

Some of Kedlaya's earlier research was on the topic of counting solutions of certain polynomial equations, in a setting relevant to cryptographic systems based on elliptic curves. This project uses some of those ideas again, but for a new purpose, he says. "Some of the insight gained by interacting with computer scientists is thus being plowed back into pure mathematics."

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