# Professor Svetlana Jitomirskaya wins Simons Foundation award

The award will give the math professor resources to continue her research into the properties of two-dimensional materials.

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Jitomirskaya's work under the award will deal with materials that are only one atom or molecule thick.

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The Simons Foundation has awarded a $5 million targeted grant for a project called "Moiré Materials Magic" to a group of physicists and mathematicians that includes Distinguished Professor Svetlana Jitomirskaya of the UCI Department of Mathematics. The project centers on the unusual physical properties that occur when two-dimensional layers of crystals that are only one atom or one molecule thick — and with tiny differences in the arrangement of the atoms and molecules in the layers — are overlaid and create so-called moiré patterns. Moiré materials, Jitomirskaya explained, may potentially realize new fundamental physics as well as find valuable applications. Mathematically, they feature a new type of so-called "quasiperiodic order," wherein moiré materials have "longer and longer pieces of larger and larger structures repeated," said Jitomirskaya, who's the world's leading expert on the topic. "The emergence of moiré materials highlights new opportunities to make math progress by looking to nature, and to make physics progress by learning from math," said Jitomirskaya. "While the key objective of the overall project is the latter, to me it is equally exciting that moiré materials have the potential to lead to fundamentally new mathematical objects." Other Moiré Materials Magic grantees are at UC Berkeley, Harvard University, University of Minnesota, and the University of Texas at Austin.

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