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Intersections of Science and Art: Graphene Kirigami Featured in Nature

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Work by Melina Blees and collaborators at Cornell University, including principal investigator Professor [Paul McEuen](#), the John A. Newman Professor of Physical Science and director of the Kavli Institute at Cornell for Nanoscale Science (KIC), has been featured in the July 29th issue of Nature. Blees, who is currently an IME Postdoctoral Scholar with [STAGE](#) (Scientists, Technologists and Artists Generating Exploration), headed by IME Professor and Distinguished Fellow in the Arts, Science, and Technology, [Nancy Kawalek](#), works on research dealing with an intriguing intersection between science and art known as "graphene kirigami."

Kirigami, the ancient Japanese art of cutting paper into beautifully intricate, symmetrical designs, has been around for centuries. Now, Blees has applied the ancient art to graphene, an incredibly durable, nanoscale material composed of sheets of carbon atoms. Blees and her collaborators explored the fundamental physical properties of graphene in seeing how graphene bends, folds, and twists into different structures. The team was able to create these different types of mechanical structures, such as pyramids, cantilevers, and hinges, at the nanoscale level. Blees, however, first had to create paper models and experiment with the different patterns and designs before working with graphene.

"It was really true exploration, cutting things out of paper and playing with them, trying to imagine how a 'hanging kirigami mobile for kids' could become a nanoscale spring for measuring forces or interacting with cells," Blees said.

The work not only has great implications for engineering new nanoscale devices with a simple, but powerful and customizable approach, but it also illustrates the tremendous value of using art to make fundamental and innovative advances in science and engineering.

Read the original Nature paper by Blees *et. al.*, [here](#).

News

- [Intersections of Science and Art: Graphene Kirigami Featured in Nature](#)
July 29, 2015
- [UChicago's Arts|Science Initiative awards five graduate collaboration grants](#)
March 11, 2014
- [STAGE comes to UChicago](#)
October 08, 2013
- [Strong Solutions by Matthew Tirrell, Dean of the Faculty of Molecular Engineering](#)
September 23, 2013

Key Researchers

- [Nancy Kawalek](#)
Professor and Distinguished Fellow in the Arts, Science and Technology
- [All researchers](#)

Related Links

- [Nature Article \(Graphene Kirigami\)](#)
- [Nature Video \(Graphene Kirigami\)](#)
- [Nature Podcast \(Graphene Kirigami\)](#)

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