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**THE 2017 HENRY R. AND GLADYS V. IRONS  
LECTURE IN PHYSICS AND ASTRONOMY**

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**RUTGERS**  
School of Arts and Sciences

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**"Kitchen Physics: Using the power of nano to turn pencils into  
electronic devices using only things found at home"**



Scientists and engineers are really excited about graphene: the first truly 2-dimensional material. Graphene, a single sheet Carbon crystal, is one atom thick but thousands of atoms across: it is the thinnest, strongest, most impermeable and most conductive material known to man. If this wasn't exciting enough, the discovery of graphene was quickly followed by many other 2D materials with exotic names like *black phosphorous* and *silicene*. I will introduce these materials, demonstrating how to make them in the kitchen, using only pencils, soap and a kitchen blender! Then, how to use it? You'll learn how 2D materials can be made using an inkjet printer, and even formed into electronic devices such as light-detectors and transistors. We'll see how graphene can be combined with household sponges, elastic bands and silly putty to prepare state of the art sensors which can detect anything from spider footprints to the human pulse.

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**2 P.M., Saturday April 22, 2017  
Physics Lecture Hall, Busch Campus, Rutgers University**

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The Irons Lectures are free talks intended for the general public: high school students and teachers, college students and teachers, friends, neighbors, and anyone interested in science and science education. The general public is cordially invited to this lecture, which will be given in the Physics Lecture Hall on the Busch Campus of Rutgers University. Free parking is available in lots 53A, 53 and 64. Driving and parking directions are available at:

<http://www.physics.rutgers.edu/directions> and <http://rumaps.rutgers.edu/location/physics-lecture-hall>.

For further information, contact Stefanie Miller ([smmiller@physics.rutgers.edu](mailto:smmiller@physics.rutgers.edu), phone: 848-445-9034)