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are transforming
innovation in
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ON THE COVER



Inventing new materials has always involved a huge amount of trial and error. Now, by feeding the equations of quantum mechanics into supercomputers, scientists are reinventing the way materials are designed. Their process is one of the 10 revolutionary advances featured in our fifth annual "World Changing Ideas" special report. Image by André Kutscherauer.



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Ten ways science will disrupt and improve the world we live in. Designing new materials atom by atom using supercomputers and quantum mechanics. Snap-together composites. Robots inspired by worms and octopuses. Bendable, stretchable video screens. Turning carbon dioxide to solid rock. An antiseptic that could save thousands of babies. And more. *By Gerbrand Ceder, Kristin Persson, Dave Levitan, Marissa Fessenden, Larry Greenemeier, Lee Billings, Katherine Harmon Courage, Charles Q. Choi, Daisy Yuhas and Dina Fine Maron*

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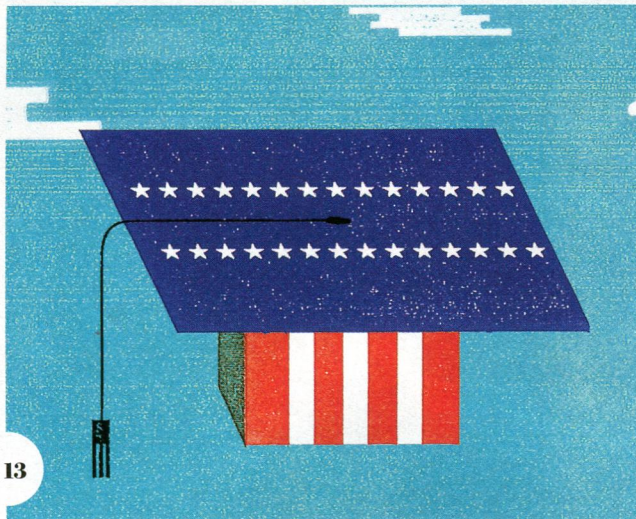
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Fighting the Flu

As flu season nears its peak, we take a look at how doctors and scientists are racing to get the upper hand on the dangerous—and unpredictable—family of influenza viruses. Go to www.ScientificAmerican.com/dec2013/flu



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