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## Center for Nanotechnology in Society University of California, Santa Barbara

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### WEEKLY CLIPS

April 21 – April 27, 2009



Vicki Colvin of Rice University will give a talk titled "Nanotechnology: Its Promise and Challenges" at the [U.S. Department of Energy's Brookhaven National Laboratory](#) on Thursday, May 14, at 4 p.m. in Berkner Hall. The talk is free and open to the public. Visitors to the Laboratory age 16 and older must carry a photo ID.

Nanotechnology-enabled systems, with dimensions on the scale of a billionth of a meter, offer great promise for solving difficult social problems and creating enormous possibilities. Their small size, high surface area, and unique properties all provide high-value materials useful in existing industries, ranging from transportation to pharmaceuticals. Of particular interest is the potential for nanotechnology to treat cancer, clean water, and create clean energy technologies.

In addition to highlighting these innovations, the talk will also touch on the emerging debate about whether consumers want or need the lifestyle that nanotechnology may make possible. Some of these concerns are centered on the idea that nanomaterials may be a new kind of pollutant. In particular, the "safety by design" model emerging for nanomaterials' production may completely change traditional concepts of risk management.

Other issues relate to larger social concerns about whether nanotechnology could be used to enhance human performance or whether the new economies for manufacturing would disenfranchise poor people tied to the "non-nano" world. Healthy dialogue about these concerns can help create a more sustainable and socially acceptable industry.

Vicki Colvin received a Bachelor's degree in chemistry and physics from Stanford University in 1988 and a Ph.D. in chemistry from the University of California, Berkeley, in 1994. During her time at Berkeley, she was awarded the American Chemical Society's Victor K. LaMer Award for her work in colloid and surface chemistry. Colvin completed her postdoctoral work at AT&T Labs.

In 1996, Rice University recruited Colvin to expand its nanotechnology program. Currently, she is Rice's Kenneth S. Pitzer-Schlumberger Professor of Chemistry and Professor of Chemical & Biomolecular Engineering. She is also co-director of the Richard E. Smalley Institute for Nanoscale Science and Technology and director of the Center for Biological and Environmental Nanotechnology, both Rice University institutions.

Colvin has garnered numerous awards for her teaching abilities, including Phi Beta Kappa's Teaching Prize for 1998-1999 and the Camille Dreyfus Teacher Scholar Award in 2002. Also in 2002, she was named one of Discover magazine's "Top 20 Scientists to Watch," and she received an Alfred P. Sloan Fellowship. Her research in low-field magnetic separation of nanocrystals was named among the top five nanotech breakthroughs of 2006 by the Forbes/Wolfe Nanotech Report and resulted in her being named "Best and Brightest" honoree by Esquire magazine. A Fellow of the Association for the Advancement of Science, Colvin is the author of over 75 articles and holds patents to seven inventions.

Posted April 27th, 2009

<http://www.azonano.com/news.asp?newsID=11128>



Posted: April 27, 2009

## Nanotechnology researcher Mirkin named to Obama's Science and Technology Advisory Council

(Nanowerk News) Northwestern University researcher [Chad A. Mirkin](#), the world's top-cited researcher in nanomedicine and one of the most widely cited chemists, has been named to the [President's Council of Advisors on Science and Technology](#) (PCAST).

President Barack Obama announced the names of the 20 members in a speech at the National Academy of Sciences today (April 27).

"This council represents leaders from many scientific disciplines who will bring a diversity of experience and views," said President Obama. "I will charge PCAST with advising me about national strategies to nurture and sustain a culture of scientific innovation."

PCAST is an advisory group of the nation's leading scientists and engineers who advise the president and vice president and formulate policy in many areas where understanding of science, technology and innovation is key to strengthening the U.S. economy and forming policy that works for the American people.

Mirkin is the George B. Rathmann Professor of Chemistry in the Weinberg College of Arts and Sciences and professor of medicine, chemical and biological engineering, biomedical engineering and materials science and engineering. He also is director of the International Institute for Nanotechnology at Northwestern.

<http://www.nanowerk.com/news/newsid=10303.php>



Posted: April 24, 2009

NANOYOU project will bring nanotechnology lessons to 30,000 European students

(Nanowerk News) Israel's Organization for Rehabilitation and Training (ORT) educational system will reveal to 30,000 European students the mysteries of nanotechnology, after winning a 1.5 million euro tender for the [NANOYOU project](#).

The nanotechnology lessons will introduce 400 of Israel's famous technical schools to 20 European countries, and are being touted as one of the most massive "educational exports" in recent history.

NANOYOU will design and undertake a communication and outreach program in nanotechnology aimed at European youth. The project will reach 11-18 year olds through school programs to take place in at least 20 EU Member States and Associated States. Additional programs aimed at young adults aged 19-25 will be offered in science centres.

While some FP6 programs have made an excellent start in informing the public about nanotechnology, they have not focused on youth nor have their activities taken place in the schools.

<http://www.nanowerk.com/news/newsid=10262.php>



**Summer Johnson**  
Executive Managing Editor

[The American Journal of Bioethics](#)

**Abstract:**

Nanotechnology has been described as many things: the next industrial revolution, the great leveler, an emerging technology, even technology of the Singularity. Yet, I am going to liken the nanotechnology revolution to the American Wild West. Let me explain why a 19th century metaphor is apt and why its actually a good thing for nanotechnology's image, its regulation, or for its progress as we move forward in the 21st century to be likened to the era of gunslingers and cowboys.

April 25th, 2009

**The Wild West of Nanotechnology**

Nanotechnology has been described as many things: the next industrial revolution, the great leveler, an emerging technology, even technology of the Singularity. Yet, I am going to liken the nanotechnology revolution to the American Wild West. Let me explain why a 19th century metaphor is apt and why its actually a good thing for nanotechnology's image, its regulation, or for its progress as we move forward in the 21st century to be likened to the era of gunslingers and cowboys.

Applications for nanotechnology in stem cell research, to pick just a single area are increasing almost weekly. There is not a week that goes by that one cannot read in the news of some new technique developed for nanotechnology and stem cell research. In one of the best articles that I have seen to date on stem cell research and nanotechnology, now almost a year old, Xie already had identified for work in stem cell research ALONE more than 35 different nanotechnological applications for everything from stem cell transfection to stem cell tissue engineering to cell tracking and imaging. And this is just for stem cell research <http://www.nanotech-now.com/columns/?article=161> .

Multiply this for nanotechnology methods for nanosurgery for every body part, then for drug delivery, then for diagnostics. You get the sense for how rapidly expanding the field of nanomedicine is growing. Multiply that times the amount of money being invested by NNI and venture capitalists and other private investment and you begin to grasp the grandiosity of nanomedicine as an endeavor. Then think about nanotechnology broadly. You begin to get the picture. Effectively it is like a group of self-replicating nanobots themselves. It is potentially a limitless field with limitless applications.

But this is precisely nanomedicine, as an interdisciplinary field's, Achilles heel and greatest asset. With so many

potential applications and directions in which to grow, it is a field that has the potential to grow exponentially or to fold in on itself, if it is not careful. There is no single governmental agency given dominion to regulate nanotechnology and oversee its progress. It has no watchdog group to reign in rogue scientists, misfits or charlatans. There is no ethics organization, code of ethics for nanoscientists—which can hardly be a monolithic group when it is made up of material scientists, engineers, chemists, biologists, physicists and more.

<http://www.nanotech-now.com/columns/?article=297>



Posted: April 21, 2009

### **European Commission launches public nanotechnology consultation**

*(Nanowerk News)* Nanotechnologies are expected to bring benefits to many areas. They are enabling technologies which will interact with and reinforce the potential of other technologies like information and communication technologies and biotechnology, with a wide range of potential applications. At the nano scale, matter shows different properties, making it difficult to predict potential adverse impact on health and the environment. As a result, the European Commission has developed a policy for their safe, integrated and responsible development.

To that end, the Commission is continuously monitoring the developments in nanotechnologies and is using the independent EU Scientific Committees to contribute to the assessment of health and environmental risks that they may pose. In this context, the recent opinion on the Risk Assessment of Nanomaterials by the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) timely contributes to current discussions on nanomaterials in the EU legislative proposals relating to novel foods and cosmetics as well as for the implementation of existing legislation such as REACH.

In its latest opinion, the SCENIHR builds on and confirms or further develops the findings reported in its earlier opinions published in 2006 and 2007: the methodologies for assessing exposure to manufactured nanomaterials to humans and the environment, as well as the identification of potential hazards require further development. Furthermore, the Scientific Committee on Consumer Products (SCCP) – which is now replaced by the Scientific Committee on Consumer Safety (SCCS) – has also contributed to the discussions with its opinion on the Safety of Nanomaterials in cosmetic products.

<http://www.nanowerk.com/news/newsid=10200.php>

THE CHRONICLE OF HIGHER EDUCATION

### **Georgia Tech Bets on a Nanotechnology Center for Atlanta**

*Georgia Tech hopes the Marcus Nanotechnology Building will help make Atlanta the hub of new high-tech industry. (Photos courtesy of Georgia Tech)*

Tomorrow the Georgia Institute of Technology will dedicate the Marcus Nanotechnology Building, a project that officials say is one of the most expensive in the institution's history.

Georgia Tech hopes that the \$90-million, 190,000-square-foot complex will attract companies to Atlanta, making the city and Georgia Tech a nanotechnology hub. (News releases about the building compare nanotechnology in Atlanta to technology in Silicon Valley.) The building reportedly has one of the largest clean rooms in the country. See a video of the building [here](#).

The Marcus Foundation—the philanthropic organization supported by Bernie Marcus, the Home Depot founder—gave \$15-million toward the building.

<http://chronicle.com/blogs/architecture/2752/georgia-tech-bets-on-a-nanotechnology-center-for-atlanta>



The first major study of media coverage, policy debates and public perceptions about nanotechnology is the focus of a new book co-authored by Professor Stuart Allan of [Bournemouth University](#).

The book, entitled *Nanotechnology, Risk and Communication* (published by Palgrave Macmillan 2009) analyses the way the media has covered the early development of nanotechnology. It also uses that coverage to contribute to the debate about the effectiveness of scientists and journalists in communicating science-related stories to the wider public.

Collectively, Professor Allan and his colleagues from the Universities of Plymouth and West of England in the UK and Monash University in Australia found that the practice of engaging the public in science-based stories tends to focus on risk management rather than wider dissemination. As a result, the book's authors recommend that scientists would benefit from a more rigorous understanding of the rapidly-changing character and day-to-day operations of the media.

"In its early stages, coverage of nanotechnology tended to be in the context of science fiction, evoking images of 'nanorobots' and 'nanosubmarines'," said Professor Allan, author of *Media, Risk and Science*. "This was especially true during the period of the extensive reporting of Prince Charles's purported comments in 2004 about the dangers of nanotechnologies giving rise to 'grey goo'.

"Science tends to be presented in the media as somehow outside society, as constituting unmediated truth, with 'communication' being conceived as a process of informing an assumed 'ignorant' or 'unaware' audience of 'the science facts'," he continued. "We have also seen how the term 'nanotechnology' itself is mired in definitional ambiguity, a problem compounded by various competing representations of the benefits and risks of particular innovations."

Research for the book was based on the findings of a study funded by the UK's Economic and Social Research Council (ESRC). Professor Allan interviewed science journalists who had written about nanotechnology and were reasonably familiar with the science involved. He and his colleagues drew further insight from interviews with scientists.

"We were particularly interested to know more about how news reporting of nanotechnology has unfolded over the years and the extent to which it has been influenced by other controversies such as the rise of BSE, genetically-modified crops or stem cell research," said Professor Allan. "We also looked at what participants themselves think about the news coverage as other studies have focused on the news reports alone."

Posted April 23rd, 2009

<http://www.azonano.com/news.asp?newsID=11078>



Posted: April 23, 2009

## EPA TSCA compliance strategies for nanoscale materials

(*Nanowerk News*) Bergeson & Campbell, P.C. is pleased to present a Webinar on "EPA TSCA Compliance Strategies for Nanoscale Materials" on May 13, 2009 at 3:00 - 4:30 p.m. ET.

The U.S. Environmental Protection Agency (EPA) is committed to assisting manufacturers and importers of nanoscale materials and other nanotechnology stakeholders understand and comply with the complexities of the Toxic Substances Control Act (TSCA).

Bergeson & Campbell, P.C. is deeply involved in the law, regulation, and science policy implications of nanotechnology.

This Webinar will provide an overview of the basics in TSCA compliance with respect to new nanoscale chemical substances that require the submission of a pre-manufacture notification with EPA.

<http://www.nanowerk.com/news/newsid=10242.php>



Posted: April 27, 2009

### Who should help support nanotechnology regulation?

(*Nanowerk News*) Who should be responsible for regulating the use of nanomaterials, especially in light of the potential environmental impact of such materials?

The issue is explored in a recent *Nano Today* magazine article by Jonathan Posner, an assistant professor in the Department of Mechanical and Aerospace Engineering, and Jameson Wetmore, an assistant professor in the School of Human Evolution and Social Change (["Should corporations contribute to nano-regulation?"](#)).

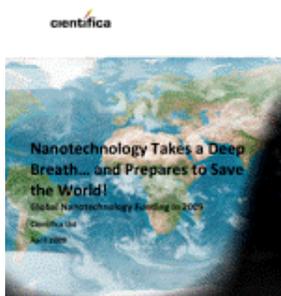
The U.S. Department of Energy is involved in a major project to learn how engineered nanomaterials used in many of today's common products are transported in our environment -- and to determine what will happen as the nanomaterials make their way into rivers, oceans, soil, plants and animals.

Posner and Wetmore discuss how regulations should be guided by a scientific consensus about the environmental impact of the materials, and they make the case that corporations -- the primary sources of the manufacture and use of engineered nanomaterials -- should contribute to efforts to do the environmental science necessary to provide a well-reasoned guide for debates

on regulation policy.

<http://www.nanowerk.com/news/newsid=10294.php>

## Nanotechnology Funding in 2009



Every year Cientifica undertakes one of the world's most exhaustive searches into the global funding of nanotechnologies in order to identify not only where the Dollars, Euros and Yen are being spent, but also to gain a unique insight into the trends shaping tomorrows applications.

This white paper gives an overview of the key numbers, which we believe to be the most accurate available anywhere. For more information please visit us at [www.cientifica.com](http://www.cientifica.com) or contact [tim.harper@cientifica.com](mailto:tim.harper@cientifica.com)

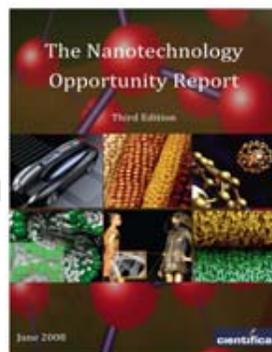
## Nanotechnologies In 2009



**Nanotechnologies In 2009: *Creative Destruction or Credit Crunch?*** is a new white paper looking at the effects of the current financial crisis on the world of nanotechnologies.

In 2009 we can expect to hear much more of Joseph Schumpeter's ideas of Creative Destruction as the world comes to terms with the credit crunch.

## The Nanotechnology Opportunity Report (NOR) 2008



[The Nanotechnology Opportunity Report \(NOR\) 2008, 3rd Edition](#) (click for more information) provides the most comprehensive report on the economic impact of nanotechnologies Cientifica has released to date. The report contains over 1,000 pages, several thousand figures and tables, and offers full market forecasts for the

This white paper looks at the five most significant issues which Cientifica CEO [Tim Harper](#) sees impacting the world of nanotechnologies in the coming year.

Feel free to disagree at [TNTlog](#) or contact us for more specific information.

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key industrial sectors impacted by nanotech, including:

- \* Electronics & Semiconductors
- \* Textiles
- \* Energy
- \* Food
- \* Drug Delivery
- \* Chemicals & Advanced Materials
- \* Printing & Packaging
- \* Automotive
- \* Aerospace & Defense
- \* Medical Devices & Therapeutics
- \* Medical Diagnostics

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