

# Nanotechnology Law Report

November 2007

Porter Wright Morris & Arthur LLP

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## White House Issues Broad Nano-EHS Statement



In November, the Executive Office of the President issued a memorandum entitled "Principles of Nanotechnology Environmental,

Health, and Safety Oversight."

The memorandum was co-signed by the President's Council on Environmental Quality and his Office of Science and Technology Policy and was directed to EPA, FDA, OSHA, NIOSH, and all other federal agencies conducting nanotechnology research and development.

In keeping with prior Administration statements, the memorandum takes the position that "existing statutory authorities are adequate to address oversight of nanotechnology and its applications." This position is also advanced by a series of American Bar Association publications.

The document suggests new regulatory ap-

proaches may be developed as new scientific information becomes available. It urges the federal government "to use standard oversight approaches" and "strive to reach an appropriate level of consistency across the government."

The memorandum also suggests new nano-related environmental, health, and safety ("EHS") information should be developed "to the extent practicable and protecting confidential information," and the federal government should "proactively promote international cooperation" on EHS research.

Unsurprisingly, Risk Policy Report, Nov. 20, 2007, Vol. 14, No. 47, reports that "[w]hile industry sources were generally pleased with the language in the memo, environmentalists and think tank officials were widely opposed to the memo, saying that current statutes are inadequate for the unique aspects of nanomaterials and that standard risk assessment practices will not suffice."

## Recap: U.S. Chamber Nanotech Conference

The U.S. Chamber of Commerce hosted "Breaking the Barriers: The BIG Business of Nanotechnology." The conference focused on commercialization, regulatory concerns, and consumer education for the emerging field of nanotechnology.

Events included speeches by Senator Ron Wyden; Dean Ronald McNeil of the University of Illinois-Springfield business school; John Marburger, science advisor to President Bush; and two roundtable discussions composed of educators, investors, researchers, and government officials.

Senator Wyden focused on the reauthorization of the 21st Century Nanotechnology Research and Development Act and the government's need to consider tailored incentives, such as an "X Prize,"

to generate investment and innovation in the field. He also emphasized nanotechnology comes forward at a key time in the debate when the country is still trying to understand the technology. He noted that because it is a pivotal time for the private sector, it is also a good time to deal with ethical and health questions. He touted Oregon as a model for bringing together the government, universities and startups in a public/private partnership to fund a new nanoscience and technology institute.

Dean McNeil spoke at length about why nanotechnology is



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important developmental barriers and recommended efforts to overcome these barriers. First, he noted commercialization is important because it creates meaningful jobs and maintains U.S. economic competitiveness. Second, he stated that potential commercial barriers include a lack of vision, will, and commitment from stakeholders. Moreover, Dean McNeil suggested there is a 10-year gap between scientific research and commerce and small companies face barriers of funding that favor research over development and commercialization. He also advocated cooperation between government and industry and encouraged the government provide more money to nanoscience and research labs. Finally, Dean McNeil recommended overcoming these barriers by setting up nationwide nanotechnology initiatives, circulating prototypes such as the prizes mentioned by Senator Wyden, nurturing scientific research without bureaucracy, helping U.S. executive and legislative bodies enhance their visions of nanotechnology, and assisting planning and support for global competition.

In the first roundtable discussion -- Regulatory Cooperation -- participants focused on environmental issues (including the EPA's newly proposed Nanoscale Materials Stewardship Program), potential risks of nanotechnology and applications, workforce issues including immigration, and government coop-

eration in funding the field of nanotechnology. They also discussed developing good business strategies for developing sustainable products and protecting the intellectual property of researchers and scientists.

Participants in the second roundtable discussion emphasized the importance of commercialization in minimizing the gap between scientific research and commerce, and recommended ventures between the public and private sectors as a possible solution. Participants discussed communicating to the public and to investors about the technology in a way that is proactive for investment purposes. They identified key barriers to nanotechnology commercialization, which included scientific complexity, lack of investment in emerging markets, and potential for setbacks to the industry. They also noted factors important for conveying the availability of the technology to investors, including getting investors to trust information sources, obtaining a sense of the benefits from development efforts, and maintaining a degree of control over potential risks.

Mr. Marburger rounded out the conference with his keynote address emphasizing the need for standards in such a newly emerging field.

## Woodrow Wilson Expert Testifies Before House Committee

Andrew Maynard of the Project on Emerging Nanotechnologies at the Woodrow Wilson Institute testified on October 31st before the House Science Committee. In his testimony, Maynard advocated six steps to improve nanotechnology safety and criticized what he believed was a lack of coordination and focus on EHS issues including:

*Create a new federal advisory committee to allow transparent input and review from industry, scientists, labor groups, nongovernmental organizations and other stakeholders; [and]*

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*Appoint a top-level government leader responsible for the action needed to address the environmental, health and safety challenges of nanotechnology.*

Maynard also criticized what he termed as "disconnects" between administrative agencies, and contended that NNI is insufficiently funded and is not focused clearly enough on EHS issues. One example of the "disconnect" according to Maynard is the fact that NIOSH filed a public comment on EPA's TSCA paper from this past summer in which NIOSH purportedly disagreed with EPA's proposed regulatory framework for nanomaterials under TSCA.



## NorTech Announces Innovation Award Winners

NorTech just announced the winners of its 2007 Innovation Award at its Summit in Westlake, Ohio. Crain's Cleveland has the story at <http://www.crainscleveland.com/article/20071113/FREE/71113016/1088/newsletter01>. Among the winners was one Northeast Ohio nanotechnol-

ogy company, NanoMimetics, Inc., which, according to Crain's, develops and commercializes nanocoatings for medical and industrial applications. Congratulations to all!

NorTech

## Cambridge Takes a Hard Look at Nanotechnology

Cambridge is well known for its top research universities and cutting-edge biotech businesses. The city is also well known for its proactive approach to regulatory and public health issues. Earlier this year, Cambridge's City Council asked its City Manager to evaluate whether the city needs a new ordinance aimed at potential EHS concerns arising from the manufacture or use of engineered nanoscale materials within city limits. The Woodrow Wilson International Center for Scholars has identified approximately one dozen businesses located in Cambridge that manufacture or use nanoscale materials in their operations. At the same time, potential nano-related EHS concerns have made news headlines over the past couple of years. The City Council was concerned about initial scientific reports that certain nanoscale materials may have toxic effects in some laboratory settings. While the jury is still out on whether the use of nanoscale materials actually poses an increased risk to human health or the environment in everyday settings, the City Council wanted to address the issue in a forward-thinking manner.

To this end, the City Manager asked Cambridge's Director of Environmental Health to analyze the issue and provide a recommended course of action. The Director has convened a six-month advisory panel comprised of Cambridge citizens, University experts, private consulting firms, lawyers, industry representatives, and non-governmental organizations to help him provide the City Manager with a list of well-reasoned options concerning whether the city needs a new ordinance and, if so, what it should look like. The seventeen-member advisory panel will hear experts speak on a

range of issues including the state of scientific studies on nano-related EHS issues, how existing federal and state laws may or may not be sufficient to address these concerns, and how any potential new ordinance may adversely affect fledgling nano-businesses within the community. The Director of Environmental Health will then use the information to craft a set of recommendations for the City Manager to review, modify, and possibly present to the City Council.



The city faces a tough task. The field of nanotechnology evolves very quickly and new products and materials are being continuously added to commerce and research. Properties of nanomaterials are highly variable and the scale of potential health impacts associated with their use is uncertain. Many federal and state governments have sponsored research projects to develop information pertinent to risk assessment and nanomaterials governance. No consensus has developed.

The advisory panel has already met four times, and the entire process is currently scheduled to wrap up in January or February 2008. The panel has a lot of ground to cover in a relatively short period of time. The city appears determined to develop an ordinance based on scientifically rigorous standards that is also practical and acceptable to local stakeholders and the business community. Based on its first four meetings, the panel seems well aware of its responsibility to balance the uncertainty of possible EHS risks posed by nanoscale materials against the certainty that needless over-regulation may stifle business development.

## Nanotechnology-Enhanced Upholstery In Chrysler Vehicles

Popular Mechanics reports Chrysler is utilizing YES Essentials fabric in its new vehicles. The fabric utilizes titanium dioxide nanoparticles to repel odor and stains:

*The newest version of YES Essentials fabric has an innovative technology that basically rids odors and volatile*



*chemicals from the interior. The fabric has a nano-sized photocatalyst (titanium dioxide) that transforms odors, smoke and harmful chemicals into micro-sized CO<sub>2</sub> and H<sub>2</sub>O particles. And, no, the amount of CO<sub>2</sub> that the seats release are not harmful to the environment, the manufacturer says.*

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## The Lux Nanotech Report, 5th Edition

If readers are still wondering whether this "nanotech" thing is just a passing fad, check out Lux Research's newest release: The Nanotech Report, 5th Edition. In this report, comprising 500+ pages over two volumes, Lux provides an overview of the status of nanotechnology as an industry.

In addition to delving into financial impacts of nanotechnology (\$11.8 billion in domestic funding, \$50 billion in product sales, and \$699 million in venture capitalist funding), the Report also profiles 121 nanotech based companies and outlines foreign investment and work in nanotech. Other issues explored include:

- Government funding: Government nanotechnology funding worldwide spanning more than 40 countries
- Corporate R&D spending: Nanotech corporate R&D spending by country and sector with key programs at

Fortune 1,000 giants

- EHS issues: Comprehensive data on nanotech EHS publications, analysis of worldwide nanotech EHS regulation and pending regulation, and a framework for addressing nanotech EHS risks
- Venture capital: Analysis of every VC deal ever closed by country, sector, year, and sponsoring VCs from 1989 through 2006
- 20-year patent study: Analysis of more than 4,995 nanotech patents and more than 103,000 claims

If you are looking for a single source review of the nanotechnology industry, Lux seems to have created that resource. Additional information on the report, including how to obtain a copy, can be found at <http://www.luxresearchinc.com/tnr.php>.

## More Nano Silver in Water?

A new product is hitting the market -- the SILVER SEAL™ Antibacterial, Washable Keyboard and Mouse by Seal Shield Corporation. What is unique about this product is that, in addition to the nano-silver embedded directly into the plastic for anti-bacterial impacts, the product is apparently completely "dishwasher safe."

The ability to put this material into the dishwasher may reignite the debate over nano silver being released into wastewater. Readers may remember a rather large discussion over the prior marketing of a Samsung washing machine that purportedly released silver ions into the rinse cycle. (See below). One of the concerns was uncertainty over what will happen to environmental systems when nano silver and/or silver ions are released into the wastewater system. Although U.S. EPA eventually elected



to regulate silver ion generators under the labeling provisions of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the concerns over potential environmental impacts were widely developed. These new products may restart that debate over releasing nanomaterials freely into the environment (not to mention the potential FIFRA ramifications given the antibacterial claims).

However, as with all things nano these days, we would be remiss if we did not mention the potential benefits this product poses. Seal Shield Corporation proposes using these products in the medical field where bacterial infection is a concern and the ability to wash and sterilize items is important.

## Samsung SilverCare Washing Machine

Marketing of Samsung's Silver Nano washing machine was curtailed for a while last year in the U.S. after EPA indicated it intended to regulate silver ion generators as pesticides under FIFRA. EPA officially announced its position on silver ion generators in the September 21, 2007



federal register. Samsung is now marketing a SilverCare washing machine with antimicrobial properties in the United States. No word on whether the new machines use silver nanoparticles (doubtful), although they still claim to generate silver ions.



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## New Radio Program to Highlight Nanotechnology

Beginning on December 2, 2007, 1310 KXAM in Phoenix, Arizona, will begin airing the Bourne Report each Sunday afternoon from 3 - 4 p.m. The radio show explores emerging technologies, including nanotechnology, and will be hosted by Marlene Bourne. For those of us living outside

the Phoenix area, the show will also be streamed live on [www.bournereport.com](http://www.bournereport.com) and archived for podcast.



## ATSDR Proposes Developing Toxicological Profile for "Nanomaterials"



Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), each year the Agency for Toxic Substances and Disease Registry's Division of Toxicology (ATSDR) at the Department of Health and Human Services (HHS) publishes in the federal register a list of priority substances for which it may create new toxicological profiles.

This year's list contains 73 proposed substances, one

of which is "nanomaterials." The generic use of the term "nanomaterials" without reference to any particular nanoscale material is unusual and most likely unworkable. As one prominent commentator recently put it, "[t]here are just too many types of nanoparticles all under the broad umbrella of nanotechnology to make any blanket statement about their interactions with, say, a cell or tissue. . ." (Kristen Kulinowski, Ph.D., ICON). "We have asked ASTDR to explain how "nanomaterials" ended up on the list and exactly what it means in this context. Stay tuned.

## NNI Head Testifies Before Congress (Again)

E. Clayton Teague of the National Nanotechnology Initiative (NNI) testified before the House Subcommittee on Research and Science Education on October 31 to address the NNI's development of its "risk research strategy." NNI has been criticized by several organizations including the Project on Emerging Nanotechnologies, the American Chemistry Council, and DuPont for its delayed development of the strategy.

The primary complaint of stakeholders is the speed at which NNI is developing its risk research priorities. Many complain that the process is taking too long to accomplish while the commercial development of nanotechnology moves further ahead. Other comments on the program include the lack of authority over NNI member agencies to dictate action and an observation by Dr. Kristen Kulinowski, director of the International Council on Nanotechnology, that gov-

ernment could lean more heavily on non-governmental resources, including industry and research universities, for information.

Some argue the speed at which NNI is developing its risk framework is ponderous given the concerns raised about the potential hazards associated with "free nanoparticles" in the environment. Concerns over NNI's actions being voiced by many facets of the nanotechnology community only add to the confusion. On the other hand, NNI is undertaking a huge project at an extremely complex intersection of science, policy, and regulation. Further, NNI is tasked with overseeing the work of 26 federal agencies, none of which falls within NNI's complete authority. Deliberate action is certainly warranted.



## Size Matters: Regulating Nanotechnology

Professor Albert C. Lin at the University of California at Davis Law School, recently published "Size Matters: Regulating Nanotechnology" in the *Harvard Environmental Law Review*. 31 *Harv. Envtl. L. Rev.* 349 (2007).

The article begins with broad overviews of (i) the potential benefits of nanotechnology, (ii) the theoretical EHS concerns accompanying the use of some nanoscale materials in certain settings, and (iii) how Lin believes existing federal laws are insufficient to address this latter risk. Most of this has been said before in a myriad of articulate papers published by the Woodrow Wilson International Center for Scholars ("WWI"). Although Lin gives WWI plenty of credit, his summaries are not as well-balanced as one might hope. At the very least, Lin should have addressed the American Bar Association papers on regulation of nanotechnology, which provide an excellent counterpoint.

Lin also spends a fair amount of time (i) recounting lessons he believes industry should have learned from the dispute over genetically modified organisms, (ii) debating whether the "precautionary principle" should be adopted by EPA, and (iii) providing regulators a host of reasons why they should specifically regulate nanotechnology sooner rather than later. Although interesting, these topics distract from the core of Lin's analysis.

The real "meat" of Lin's paper is his proposal for new all-encompassing nano-specific federal regulation. Under Lin's proposal, all products containing nanoscale materials would be subject to mandatory EPA premanufacturing notification and labeling requirements. Additionally, products containing "free nanomaterials" would be subject to a screening process, post market monitoring, and bonding requirements.

Regarding mandatory EPA premanufacturing notification, Lin envisions such notice would include a description of the specific nanoscale material being used, the manufacturing process employed, any resulting by-products from that process, available information on health and environmental effects, and an estimate of number of people who might be exposed. Lin acknowledges most of this information is already required in premanufacturing notices for nanoscale materials deemed to be "new chemical substances" or a "significant new use" of an existing chemical substances under TSCA. He argues, however, that incorporating these same requirements into an entirely new nano-specific law is preferable because it would be less subject to legal chal-

lenges and could be structured much broader than TSCA to include consumer and FDA regulated products under a single unified nano-regulation.

Regarding nano-labeling, Lin proposes new labels for all products containing nanoscale materials. Such labels would identify the specific nanomaterials used in the product and also "[p]rovide a brief comparison of the nanomaterial with the bulk version of the material." Lin acknowledges these notice and labeling requirements will depend on development of standard terminology and nomenclature for nanotechnology. Lin does nothing, however, to explain what type of comparative information he would actually require in such labels.

More problematic is Lin's proposal regarding "free nanomaterials." Lin argues because "free nanomaterials" pose increased health risks, they should be subject to the additional requirements of screening, bonding, and workplace and waste stream monitoring. Lin needs to spend more time developing his concept of "free nanomaterials," and providing his readers with a better idea of their actual prevalence (or lack thereof) in likely exposure scenarios so they can assess the usefulness of his overall proposal.

Nevertheless, Lin proposes that screening tests be used to curtail the use of certain "free nanomaterials" that appear most likely to be toxic. "A substance that fails to pass the screening would not be completely excluded from commercial use, however. For such substances, the burden would shift to the manufacturer to demonstrate through more extensive research that the substance can be used in a safe manner." Lin recognizes that new in vitro tests will need to be developed to accomplish this result, and they must be periodically reevaluated for effectiveness.

Concerning post-manufacturing monitoring, Lin proposes manufacturers using "free nanomaterials" be required to gather toxicity data, track fate and transport of their nanomaterials in the environment, and monitor any adverse exposure effects in the environment and workplace. This data would be submitted to EPA and used to evaluate the effectiveness of its existing regulation of nanoscale materials. Again, Lin provides few specifics regarding what type of information would actually be required under this part of his proposal.

Regarding financial responsibility for any potential personal injury or environmental damage caused by "free nanomaterials," Lin argues typical commercial insurance coverage



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will not work because insurance companies may decline to cover nano-related EHS risks, leaving no pool of recovery funds for possible plaintiffs. Additionally, Lin argues a liability cap fund partially funded by the government (like Price-Anderson Act for nuclear power) is also unacceptable because it shifts costs and risks to the government and/or "potential victims" and does not adequately compensate for all potential losses. He argues these costs should be borne by the nanotechnology industry.

To address these purported deficiencies, Lin advocates environmental bonding, calling it the most important component of his proposal:

*"Under this requirement, any manufacturer or distributor introducing into commerce a product containing free nanomaterials would be required to post a dated assurance bond that would cover damages that may arise as a result of the company's operations for each year. EPA would set the value of the bond at an amount adequate to cover the most damaging scenario deemed plausible under a worst-case analysis. Such an analysis, which would be assigned to an independent scientific advisory board, would consider factors such as possible routes and levels of exposure, and similarities between the material in question and substances with known toxicology. The term of the bond would be fifteen years, or a*

*period long enough to generate a reasonable amount of short term and long-term toxicity information, and its value could be revised upward or downward periodically to reflect new information. The bond would be refundable in whole or part, with interest, at the end of the term if the company could demonstrate lower damages, or lower expected damages, than those estimated by EPA in setting the bond. The unrefunded portion of the bond, intended to cover expected damages that have not yet occurred, would be deposited in a trust fund that the proposal would establish."*

Anticipating reaction to his bonding proposal, Lin admits it is likely to slow down innovation and commercialization, will have administrative costs, and that the bonds themselves may be insufficient to cover all potential nano-related EHS losses. More importantly, to more fully develop his bonding proposal, Lin should explain whether and how he believes the Comprehensive Environmental Response, Compensation, and Liability Act is insufficient to assess and recover the potential nano-environmental remediation costs he highlights. The paper could also benefit from additional explanation of why Lin believes traditional toxic tort, product liability, and personal injury laws are insufficient to compensate those potentially injured from exposure to nanomaterials.

## The Economist on Nano Safety

The November 22, 2007 issue of The Economist contains a story on nanotechnology safety entitled "A little risky business." The article focuses on Andrew Maynard's presentation before the House Science Committee in October, an event we cover above, and also addresses ongoing debate over the use of silver nanoparticles as antimicrobial agents in consumer products.

All in all, The Economist's article provides a useful synopsis of the current dilemma surrounding nanotechnology safety. Its safety discussion begins with a discussion of the distinction between naturally occurring nanoparticles and engineered nanoparticles:

*All that sounds alarming, but assessing the risks calls for perspective. Humans are already surrounded by nanoparticles of one sort or another. Much of the food people eat is made of naturally occurring nanoscaled components. Each person breathes in at least 10m nanoparticles a minute. Most of them do no harm.*

That said, we are somewhat disappointed the article did not

sufficiently emphasize the inconclusive nature of recent animal studies on nano safety. The article alludes only to prior "negative" studies that show the potential for toxicity:

*[s]tudies show there is the potential for such materials to cause pulmonary inflammation; to move from the lungs to other organs; to have surprising biological toxicity; to move from within the skin to the lymphatic system; and possibly to move across cell membranes.*

There are a number of recent studies suggesting not all nanomaterials have significant potentially toxic effects -- see, e.g., Nanotechnology Law Report's prior coverage of the buckyball study and the study looking at SWNTs in fruit flies.

With all of that said, the article's bottom line appears reasonable -- that we need to do a better job learning what the risks of nanomaterials are so that we can responsibly regulate their use and manufacture and not lose the "baby with the bathwater" in the process.

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## Lloyd's of London & Nano

On December 10, 2007, in the Old Library at Lloyd's, the company and Lighthill Risk Network will hold a conference to examine "the risks and opportunities of nanotechnology." Included in the conference will be experts from various fields to discuss nanotechnology developments throughout the industry. Lloyd's has already released one article on the subject and plans to release a report in December to analyze nanotechnology issues.

Insurance companies are continuing to analyze the unique issues presented by nanotechnology in society. Given the

industry's previous encounters with risks such as asbestos and environmental contamination of real estate, it is understandable that insurers may be more wary of any new technology. Like everyone else though, insurance companies are only now starting to be able to assess the risks associated with nanomaterials, and most find themselves in the same position as the rest of us: what to do in the absence of nano-specific regulation?



## "Nanotechnology is coming. You can't stop it."



Insurance Services Office, Inc. (not to be confused with the International Organization for Standardization) recently ran a two-page color advertisement in the "Industry Focus" advertising supplement to the November 19, 2007 edition of "Business Insurance" newspaper. The advertisement appeared in the dead center of the newspaper's insert, complete with

staples in the middle. The advertisement's caption was "Nanotechnology is coming. You can't stop it. But can you insure it?" This caption appears under a field of 50+

"Robby the Robot" knock-off cartoon characters who are marching menacingly with outstretched lower arms towards the reader. The opposing visual is a wide-eyed businessman in apparent open-mouthed terror of the approaching nanobots. (A kinder, gentler form of Grey Goo we guess). ISO thoughtfully asks its readers what they know about various types of nanoparticles and the "chances of nanobiohazards running amuck." Helpfully, the company also pledges to reduce "your company's risk factor to nanolevels." In addition to writing standardized commercial insurance policy templates, ISO also provides the insurance industry with aggregate statistics, data, analysis, and decision-support services.

## Legal Blogs

As our electronic readers may have noticed, Porter Wright relies on LexBlog to maintain and service our website/blog -- [www.nanolawreport.com](http://www.nanolawreport.com). For those who are interested, LexBlog recently published the results of its own survey of the 200 largest law firms in the country and found that 39 of these firms publish a total of 56 "official" blogs -- including our own Nanotechnology Law Report. An additional 18 lawyers at these same firms publish "unofficial" blogs (blogs unbranded with a firm name), for a total of 74 blogs from these 200 firms. Amazingly, nearly fifty percent of these blogs were designed by LexBlog, which has definitely emerged as one



of the leaders in this niche. Porter Wright hopes to roll out additional legal blogs in 2008, and we intend to keep Nanotechnology Law Report interesting and up-to-date for our readers. Other LexBlog sites that may be of interest to our readers are:

[www.druganddevicelaw.blogspot.com](http://www.druganddevicelaw.blogspot.com)

[www.patentbaristas.com](http://www.patentbaristas.com)

[rfidlawblog.mckennalong.com](http://rfidlawblog.mckennalong.com)

[www.intellectualpropertylawblog.com](http://www.intellectualpropertylawblog.com)

[www.svmedialaw.com](http://www.svmedialaw.com)

[www.chicagoplitigation.com](http://www.chicagoplitigation.com)



**WasteNews**  
CAPITOL HILL SUMMIT

*A National Conference  
on Environmental  
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## Events and Publications

**EXPLORING CLINICAL TRIALS: A PRIMER ON LEGAL ISSUES AFFECTING THIS EMERGING AREA OF LIFE SCIENCE.** Porter Wright Morris & Arthur LLP and the Columbus Bar Association will co-host this seminar in Columbus, Ohio, on December 4, 2007.



**RISK 007: AGENTS OF ANALYSIS.** John Monica will be speaking on nano-related legal issues at the 2007 Annual Meeting of the Society for Risk Analysis in San Antonio, Texas on December 9 - 12, 2007 .



**CAMBRIDGE NANOTECHNOLOGY ADVISORY PANEL MEETING.** The next meeting of the Cambridge Nanotechnology Advisory Panel will take place in Cambridge, Massachusetts on December 19, 2007. Please call for details.



John Monica will be speaking on nanotechnology issues to the **NATIONAL ALUMINUM CREDIT GROUP** in West Palm Beach, Florida on January 22, 2008.



**IMI'S 3RD ENGINEERED FINE & NANOPARTICLE APPLICATIONS CONFERENCE.** John Monica will be speaking on "Nanotechnology Environmental Health and Safety, Current Regulation and Industry Initiatives" at the Radisson Orlando Resort – Celebration in Orlando, Florida on January 28, 2008.



**INTERTECHPIRA'S "CAPITALIZING ON NANOPLASTICS: THE TECHNOLOGY, MARKET, AND FACTORS FOR COMMERCIAL AND INDUSTRIAL SUCCESS"** will be held at the Hilton Palacio del Rio in San Antonio, Texas on February 4 - 6, 2008.



**INNOVATIVE APPROACHES TO NANOTECHNOLOGY ENVIRONMENTAL GOVERNANCE.** George Washington University Law School, Porter Wright Morris & Arthur LLP, and the Environmental Law Institute will jointly host a conference addressing Innovative Approaches to Nanotechnology Environmental Governance in Washington, D.C. on February 12, 2008. The morning session will feature speakers on prominent issues surrounding the environmental regulation and governance of nanotechnology. The afternoon session will be a panel discussion with audience participation focusing on the issue of whether it is possible or desirable to merge existing approaches to create a comprehensive environmental governance regime for nanotechnology. Stay tuned for more details as conference development progresses.



**WASTE NEWS CAPITOL HILL SUMMIT.** Porter Wright Morris & Arthur LLP and Crain Communications will co-host this conference focused on federal environmental laws and regulations and how they affect businesses at the Omni Shoreham in Washington, D.C. on February 12-13, 2008. Stay tuned for more details as conference development progresses.



Look for our new article -- "FDA Labeling of Cosmetics Containing Nanoscale Materials" -- in the December edition of Nanotechnology Law & Business.



*Capitalizing on Nanoplastics: The Technology, Market, and Factors for Commercial and Industrial Success, San Antonio, TX February 4 - 6, 2008*

*Innovative Approaches to Nanotechnology Environmental Governance, Washington, D.C., February 12, 2008*



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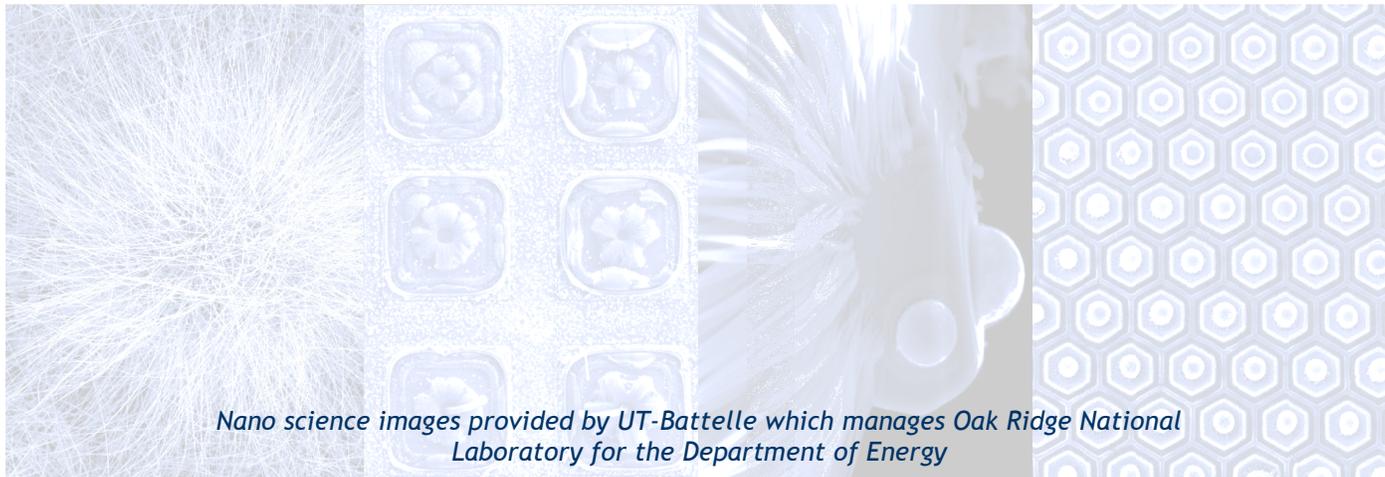
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*Nano science images provided by UT-Battelle which manages Oak Ridge National Laboratory for the Department of Energy*