

Greenlist Bulletin

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This is the weekly bulletin of the TURI Library at the University of Massachusetts Lowell. Greenlist Bulletin provides previews of recent publications and websites relevant to reducing the use of toxic chemicals by industries, businesses, communities, individuals and government. You are welcome to send a message to jan@turi.org if you would like more information on any of the articles listed here, or if this email is not displaying properly.



A Research Strategy to Discover the Environmental Causes of Autism and Neurodevelopmental Disabilities

[Source: Environmental Health Perspectives, April 2010](#)

An editorial published in the journal Environmental Health Perspectives calls for increased research to identify possible environmental causes of autism and other neurodevelopmental disorders in America's children and presents a list of ten target chemicals including which are considered highly likely to contribute to these conditions.

Philip Landrigan, MD, MSc, a leader in children's environmental health and Director of the Children's Environmental Health Center (CEHC) at Mount Sinai School of Medicine, co-authored the editorial, entitled "A Research Strategy to Discover the Environmental Causes of Autism and Neurodevelopmental Disabilities," along with Luca Lambertini, PhD, MPH, MSc, Assistant Professor of Preventive Medicine at Mount Sinai and Linda Birnbaum, Director of the National Institute of Environmental Health Sciences.

The editorial was published alongside four other papers - each suggesting a link between toxic chemicals and autism. Both the editorial and the papers originated at a conference hosted by CEHC in December 2010.

The National Academy of Sciences reports that 3 percent of all neurobehavioral disorders in children, such as autism spectrum disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD), are caused by toxic exposures in the environment and that another 25 percent are caused by interactions between environmental factors and genetics. But the precise environmental causes are not yet known. While genetic research has demonstrated that ASD and certain other neurodevelopmental disorders have a strong hereditary component, many believe that environmental causes may also play a role - and Mount Sinai is leading an effort to understand the role of these toxins in a condition that now affects between

400,000 and 600,000 of the 4 million children born in the United States each year.

"A large number of the chemicals in widest use have not undergone even minimal assessment of potential toxicity and this is of great concern," says Dr. Landrigan. "Knowledge of environmental causes of neurodevelopmental disorders is critically important because they are potentially preventable."

CEHC developed the list of ten chemicals found in consumer products that are suspected to contribute to autism and learning disabilities to guide a research strategy to discover potentially preventable environmental causes. The top ten chemicals are:

1. Lead
2. Methylmercury
3. PCBs
4. Organophosphate pesticides
5. Organochlorine pesticides
6. Endocrine disruptors
7. Automotive exhaust
8. Polycyclic aromatic hydrocarbons
9. Brominated flame retardants
10. Perfluorinated compounds

In addition to the editorial, the other four papers also call for increased research to identify the possible environmental causes of autism in America's children. The first paper, written by a team at the University of Wisconsin - Milwaukee, found preliminary evidence linking smoking during pregnancy to Asperger's disorder and other forms of high-functioning autism. Two papers, written by researchers at the University of California - Davis, show that PCBs disrupt early brain development. The final paper, also by a team at UC - Davis, suggests further exploring the link between pesticide exposure and autism.

[Download the article](#)

Wind pushes plastics deeper into oceans, driving trash estimates up

[Source: University of Washington, April 25, 2012](#)

While working on a research sailboat gliding over glassy seas in the Pacific Ocean, oceanographer Giora Proskurowski noticed something new: The water was littered with confetti-size pieces of plastic debris, until the moment the wind picked up and most of the particles disappeared.

After taking samples of water at a depth of 16 feet (5 meters), Proskurowski, a researcher at the University of Washington, discovered that wind was pushing the lightweight plastic particles below the surface. That meant that decades of research into how much plastic litters the ocean, conducted by skimming only the surface, may in some cases vastly underestimate the true amount of plastic debris in the oceans, Proskurowski said.

Reporting in the journal of *Geophysical Research Letters* this month, Proskurowski and co-lead author Tobias Kukulka, University of Delaware, said that data collected from just the surface of the water commonly underestimates the total amount of plastic in the water by an average factor of 2.5. In high winds the volume of plastic could be underestimated by a factor of 27.

"That really puts a lot of error into the compilation of the data set," Proskurowski said. The paper also detailed a new model that researchers and environmental groups can use to collect more accurate data in the future.

Plastic waste in the oceans is a concern because of the impact it might have on the environment. For instance, when fish ingest the plastics, it may degrade their liver functions. In addition, the particles make nice homes for bacteria and algae, which are then transported along with the particles into different regions of the ocean where they may be invasive and cause problems.

Proskurowski gathered data on a 2010 North Atlantic expedition where he and his team collected samples at the surface, plus an additional three or four depths down as far as 100 feet. "Almost every tow we did contained plastic regardless of the depth," he said.

By combining the data with wind measurements, Proskurowski and his co-authors developed a simplified mathematical model that could potentially be used to match historical weather data, collected by satellite, with previous surface sampling to more accurately estimate the amount of plastic in the oceans.

In addition, armed with the new model, organizations and researchers in the future might monitor wind data and combine it with surface collections in order to better estimate how much plastic waste is in our oceans.

"By factoring in the wind, which is fundamentally important to the physical behavior, you're increasing the rigor of the science and doing something that has a major impact on the data," Proskurowski said.

Draft guidance for industry: safety of nanomaterials in cosmetic products

[Source: U.S. Food and Drug Administration, April 25, 2012](#)

FDA is announcing the availability of the draft guidance entitled "Guidance for Industry: Safety of Nanomaterials in Cosmetic Products." The draft guidance is intended to assist industry in identifying the potential safety issues of nanomaterials in cosmetic products and developing a framework for evaluating these issues. The draft guidance is being issued consistent with FDA's good guidance practices regulation (21 CFR 10.115). The draft guidance, when finalized, will represent the Agency's current thinking on the safety of nanomaterials in cosmetic products. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public. An alternative approach may be used if such approach satisfies the requirements of the applicable statutes and regulations.

Although you can comment on any guidance at any time (see 21 CFR 10.115(g)(5)), to ensure that the Agency considers your comment on this draft guidance before it begins work on the final version of the guidance, submit either electronic or written comments on the draft guidance by July 24, 2012.

[Download the guidance document](#)

EWG Cleaners Hall of Shame Reveals Hidden Hazards

[Source: Environmental Working Group, April 24, 2012](#)

The Environmental Working Group "Cleaners Hall of Shame" describes common household cleaners, including some hyped as "safe" or "natural," that can inflict serious harm on unwary users. Many present severe risks to children who may ingest or spill them or breathe their fumes.

The EWG Cleaners Hall of Shame is excerpted from the comprehensive EWG Cleaners Database project, due for publication in fall 2012.

EWG's research has turned up products loaded with toxic compounds banned in some countries. Some ingredients are known to cause cancer, blindness, asthma and other serious conditions. Others are greenwashed, meaning that they are not, as their ad hype claims, environmentally benign. Still more hide the facts about their formulations behind vague terms like "fragrance."

Though many Americans assume that government bodies oversee the safety of the multi-billion-dollar household cleaning products industry, it is largely unregulated. Rep. Steve Israel (D-NY) introduced the Cleaning Product Right to Know Act of 2011 which would require cleaning products

makers to list ingredients on the product labels while also maintaining comprehensive, up-to-date lists of ingredients on their websites in multiple languages.

The EWG Cleaners Database aims to fill this information gap in order to give people straight facts developed by independent scientists. Now under construction, this ground-breaking initiative aims to uncover the truth about toxic chemicals in common household products on the American market and to empower consumers to make smart choices. Its publication will mark the first comprehensive independent scientific analysis of toxic chemicals in more than 2,000 cleaning products and 200 brands.

The EWG Cleaners Hall of Shame offers tips to consumers to help them avoid the most hazardous products and find safer alternatives.


[Download the document](#)

Politicization of Science in the Public Sphere: A Study of Public Trust in the United States, 1974 to 2010

[Source: American Sociological Review, April 2012](#)

Author: Gordon Gauchat

This study explores time trends in public trust in science in the United States from 1974 to 2010. More precisely, it tests Mooney's (2005) claim that conservatives in the United States have become increasingly distrustful of science. Using data from the 1974 to 2010 General Social Survey, it examines group differences in trust in science and group-specific change in these attitudes over time. Results show that group differences in trust in science are largely stable over the period, except for respondents identifying as conservative. Conservatives began the period with the highest trust in science, relative to liberals and moderates, and ended the period with the lowest. The patterns for science are also unique when compared to public trust in other secular institutions. Results show enduring differences in trust in science by social class, ethnicity, gender, church attendance, and region. It explores the implications of these findings, specifically, the potential for political divisions to emerge over the cultural authority of science and the social role of experts in the formation of public policy.



You are welcome to send a message to jan@turi.org if you would like more information on any of these resources. Also, please tell us what topics you are particularly interested in monitoring, and who else should see Greenlist. An online search of the TURI Library catalog can be done at <http://library.turi.org> for greater topic coverage.

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