

June 16, 2008

The Honorable Daniel K. Inouye
Chair, Committee on Commerce, Science, and Transportation
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

The undersigned public-interest organizations respectfully submit the following comments for the reauthorization of the National Nanotechnology Initiative (NNI), which is currently before the Senate Science, Technology, and Innovation Subcommittee. The principles¹ we believe must guide the NNI include:

- Transparency in funding and research
- A precautionary, public-interest approach to assessment
- Inclusion of the broader impacts in research
- Meaningful public participation in process

Incorporating these principles into nanotechnology research, development, and assessment is essential to shift the priority of federal nanotechnology programs from maximizing short-term commercial and academic interests to serving the long-term public interest. Such a shift requires a dramatic change in funding over the next few years.

Recent studies of carbon nanotubes have found that some nanotubes can cause health problems long associated with asbestos. The uncertainties raised by such studies (neither of which were funded by the US National Nanotechnology Initiative) point to the need for full and adequate environmental, health, safety, and societal analysis *before* commercialization. Of grave concern is that the House bill, as passed, eliminated even the modest 10 percent floor for environmental, safety and health research. We support a temporary halt to the commercialization of nanotechnologies in order to allow for a rapid acceleration of scientific assessments and deliberative public dialogues on the long-term consequences of a nanotech revolution can proceed immediately in a meaningful way. The latter must occur now, before further commercialization, or their outcomes will be a moot point able to compromise sustainable economic and societal progress for our nation.

The NNI reauthorization bill provides Congress with the opportunity to prioritize research on the questions about long-term consequences that have been left unfunded, unanswered, and disregarded in the competitive rush to market. It also provides a chance to maximize the social benefits of the NNI by bringing a broad range of stakeholders—including not only industry but also labor, consumer, environmental, and other nonprofit public-interest groups—into the process.

¹For a full description of these principles, please see www.nanoaction.org and <http://nanoaction.org/nanoaction/doc/nano-02-18-08.pdf>

Top experts have raised urgent environmental, health and safety questions, but agencies have allocated few dollars to seek the answers. Likewise, there are many equally significant questions about the ethical and social consequences of moving ahead full speed with a major techno-social revolution without implementation of necessary safeguards. Engagement of the public about potential benefits and potential harms has barely begun.

Furthermore, gaping holes in research and understanding bring gaping holes in the financial sustainability of nanotechnologies. Swiss Re (one of the world's largest reinsurers) has branded nanotechnology as uninsurable under the current mad scramble to develop consumer applications. Other financial mammoths, including Lloyd's of London are increasingly "wary of these new technologies."² These liability issues and the growing evidence of health and safety risks for those who are most exposed to nanomaterials—including researchers and students—demonstrate why a new federal focus on the long-term public interest also stands to best serve the long-term interests of universities and industries.

Congress should prioritize funding to find answers to these questions and to engage the public in the necessary deliberations about those questions and answers, rather than promoting the premature commercialization of nanomaterials. Accordingly, we propose a floor of 40 percent of expenditures be allocated for Environmental Health Services (EHS) and Societal Dimensions activities, including deliberative public input. We believe such a significant increase is necessary due to the urgency of the current situation and the failure of the NNI process to encourage agencies to fund this research. The time is past due to fund and address critical research issues. At least three to four new nanotech products appear in the market each week.³ Untold numbers of consumers, industrial workers, and researchers and students in federally funded laboratories are exposed to potential harm.

Provisions in the House-passed bill to promote technology transfer are premature, as are the educational provisions, which would expose secondary and undergraduate students to health and safety risks in lab settings that are largely unregulated. The old assumption that speeding the commercialization of federally funded R&D will generate a net increase of good jobs in the U.S. is outdated. Given the new reality of our global economy, Congress can expect that many nano-related jobs will not remain, or even originate, in the U.S. Nor should Congress promote jobs for workers here, or in other countries, that compromise their health and the health of their families, communities, and environments because of premature commercialization.

The US lags far behind in its funding research to understanding EHS effects of nano-science, let alone the ethical and social consequences. The recent GAO study concluded that even the claims of the small amounts allocated to EHS research were substantially inflated.⁴ Other studies show that European governments currently spend twice as much as the U.S. on risk research.⁵ We

² http://www.lloyds.com/NR/rdonlyres/B9C7371E-83D4-49DD-8268-5D6C800FBDDF/0/ER_Nanotechnology_Report.pdf

³ <http://www.sciencedaily.com/releases/2008/04/080424102505.htm>

⁴ Government Accountability Office, *Nanotechnology: Better Guidance Is Needed to Ensure Accurate Reporting of Federal Research Focused on Environmental, Health, and Safety Risks* (March 2008).

⁵ <http://www.sciencedaily.com/releases/2008/04/080421072206.htm>

must regain our place as the world's leader in democratic processes and protection of health and environment.

We look forward to working with the Committee going forward and urge that these concerns be addressed in mark-up of the bill.

Respectfully submitted,

Alexis Baden-Mayer
The Organic Consumers Association

Jaydee Hanson
The International Center for Technology Assessment

Ian Illuminato
Friends of the Earth

Adam Tapley
The Center for the Study of Responsive Law

Rick Worthington
The Loka Institute