Good Morning Chairman Gordon and members of the Committee. I am Dr. Raymond David, a toxicologist with BASF Corporation, and appearing before you today on behalf of the American Chemistry Council and ACC's Nanotechnology Panel to speak in favor of the NNI Amendments Act of 2008.

I appreciate Chairman Gordon's invitation to address the House Committee on Science and Technology on the role of the National Nanotechnology Initiative (NNI) in planning and implementing the environmental, safety, and health research necessary for the responsible development of nanotechnology.

ACC represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. In 2005, ACC formed its Nanotechnology Panel consisting of domestic producers that are engaged in the manufacture, distribution, and/or use of chemicals that have a business interest in the products of nanotechnology. Panel member companies wish to foster the responsible application of nanotechnology; to coordinate nanotechnology environmental, health, and safety research initiatives undertaken by member companies and other organizations; and to facilitate the exchange of information among member companies and other domestic and international organizations on issues related to applications and products of nanotechnology.

The infrastructure that the NNI amendments would create will greatly improve the ability of the US to plan, coordinate, and implement research programs – especially ones focused on the safe use of nanomaterials, an issue that has been raised many times in the past few years. This infrastructure and focus will be welcome in an area that has seen an explosion of research and generation of experimental data – not always focused. The US has had many intellectual and financial resources applied to studying nanomaterials, but not necessarily directed at solving any one issue. Under the NNI amendment, a central, federal, research oversight function would be created to address specific research questions and provide the capability to utilize all federal resources to answer those questions – much like other governments throughout the globe.

This centralized oversight will bring the strengths of each federal research organization together to address a single issue. For example, scientists in the National Characterization Laboratory in Frederick, MD, have extensive experience detecting a variety of nanomaterials in biological fluids; scientists in NIOSH have verified the protective effect of personal protective equipment and have investigated the cellular effects of dermal exposure; and scientists in NIEHS and NCTR have developed techniques and conducted experiments to better understand the potential for dermal penetration of nanomaterials. Being able to bring all these entities and expertise together to answer specific questions on the applied nanomaterials could bring swift answers to questions that would take industry or academia alone much longer to evaluate.

The amendments would also mandate that NNI provide information to the academic and industrial research community on current research programs, available techniques and methodologies, and facilities to support robust scientific research. This information should reduce the redundancy that we currently find in the explosion of scientific literature, and help gain acceptance of minimal characterization criteria needed for understanding the nature of what particle was tested- nano sized or otherwise. Too often we find published studies that refer only to obtaining a nanomaterial from a vendor and adding that to a biological test system. Investigators need to know how and where they get characterized nanomaterials for study. Otherwise, their research may be difficult to interpret in the context of human or environmental safety assessment.

ACC strongly supports the amendment's purposes to have NNI provide support for programs designed to educate all stakeholders, including the public, on nanotechnology. The public may very well have a skewed perception of nanotechnology and specifically the use of nanomaterials. Sensational articles on nanotechnology in the mainstream media can distort information, and we all must be mindful of the urgent need to present information on nanotechnology in a factually accurate, balanced way. The public will be far less likely to be receptive to this emerging technology if information about its potential risks and benefits is not faithfully reported in clear, straightforward terms.

Of course, the infrastructure that these amendments would provide does not guarantee success. Implementation is what is important. ACC would also like to re-emphasize that a high quality, comprehensive and prioritized federal research strategy focusing on nanotechnology environment, health, and safety is still missing and should:

- **Focus on risk assessments, and the generation and application of information on the continuum of exposure, dose and response;**
- **Promote new interdisciplinary partnerships that bring visionary thinking to research on nanotechnology;**
- **Support better understanding of the fundamental properties of nanomaterials that have an impact in the exposure-dose-response paradigm.**
- **Develop processes for establishing validated standard measurement protocols so that individual or categories of materials can be studied;**
- **Clearly delineate the responsibilities, programs, timelines, and anticipated results of funded projects for each federal agency. and**
- **Leverage planned and ongoing work by the Organization for Economic Cooperation and Development's (OECD) Working Party on Manufactured Nanomaterials, particularly in identifying on-going or planned research projects by other countries and interpreting the results of this research, and the testing of representative**

nanomaterials using standard test methods to assess potential health or environmental hazards.

When ACC testified before you last October, we urged as an appropriate next step, the funding of an independent review by the National Research Council Board of Environmental Studies and Toxicology (BEST) to establish EHS research priorities for manufactured nanomaterials and a substantial increase in federal funding of EHS programs for manufactured nanomaterials. ACC continues to believe that BEST should develop and monitor implementation of a comprehensive roadmap for federal EHS research projects and set priorities with evaluation metrics suitable for federal funding. This funding would enable BEST to develop a roadmap and strategy for the federal government for environmental, health, and safety research.

We look forward to working with the Congress and NNI to make the implementation of the NNI amendments a success. We are hopeful that this bill will be passed to allow that to happen.