

## Jay West, Nanotechnology Panel of the American Chemistry Council

The Nanotechnology Panel of the American Chemistry Council appreciates the opportunity to offer comments on the draft National Technology Initiative Strategic Plan 2014. The panel supports the critical role the National Nanotechnology Initiative (NNI) plays in coordinating the efforts of federal agencies to advance research, commercialization, education, and responsible development of nanotechnology.

The panel agrees with the four goals articulated in the draft strategic plan. A world-class research and development program (Goal 1), purposeful efforts to promote commercialization (Goal 2), and federal efforts to enhance and sustain the technical capacity of the U.S. workforce (Goal 3) are essential to realizing the promise of nanotechnology. We also agree with the draft plan's premise that responsible development of nanotechnology through research in environmental health and safety, including the ethical, legal, and social implications of nanotechnology (Goal 4), is critical to ensuring nanotechnology-enabled products minimize potential adverse impacts and maximize benefits to people and the environment (Goal 4). We offer these specific comments on the goals section of the draft:

1. In pursuing the draft plan's goals, the panel urges NNI agencies to make communication of "nanoscale science and technology success stories" (page 25, line 24) a higher priority. We are often concerned that neither the nanotechnology community nor the general public is sufficiently aware of the advances made through federal investments. We suggest adding language that puts more emphasis on nanotechnology-related achievements in agencies' broader public outreach and communications strategies, emphasizing visual activities likely to capture the attention of the general public.
2. The panel urges NNI agencies to include information on regulatory obligations in the "information materials" mentioned in item 2.1.3 (page 28, line 8). Small business stakeholders at the NNI's September 2013 risk workshop identified a regulatory road map as a priority need, and such a resource is consistent with objective 2.1.
3. The draft plan states that NNI agencies have made "significant progress in addressing research needs" (page 35, line 32); however, it is unclear that there is a central information source that summarizes those needs and the steps that constitute "significant progress." The draft plan appears to acknowledge such a need in the paragraph below objective 4.2 (page 37), and the panel urges NNI agencies to work together to address this gap in communicating and making available information on NNI agencies' achievements in addressing research needs.
4. The Panel is concerned that nearly all of the objectives and sub-objectives in goal 4 are process-oriented (e.g., workshops, networks, stakeholder engagement). There is little mention of specific types of tools to be developed or questions and issues to be addressed. As such, it is not clear where agency work on occupational exposure, high throughput methods, environmental monitoring, or other scientific advances related to EHS would fit (such work clearly fits under item 4.1.1. in the 2011 plan). We strongly urge the drafting team to reconsider the way work under goal 4 is described and to describe it in a more tangible, definitive, and outcome-oriented way.
5. The Panel notes with interest the statement at 4.4.4.1 (page 39) concerning the safety of nanomaterials currently in use and the need for "sustainable alternatives." As written, the statement can be interpreted as a generalization that no nanomaterials in any current use can be characterized as safe or sustainable. The Panel requests clarification of the intended meaning of the statement and suggests that seeking alternatives is appropriate in situations where the use of a nanomaterial presents an issue of health or environmental relevance that cannot be managed adequately.

Regarding the Nanotechnology Signature Initiatives (NSIs), the panel supports such focused initiatives to meet societal needs and advance U.S. leadership in nanotechnology. Among the NSIs, the Panel would like to emphasize the importance of a Nanotechnology Knowledge Infrastructure (NKI) to support nanotechnology research, development, and application. The need for a robust knowledge management system has been

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identified by stakeholders at multiple NNI workshops. The NNI effort has particular relevance for the EHS research community, and we urge NNI agencies to prioritize the development, deployment, and ongoing management of such a resource.

The ACC Nanotechnology Panel appreciates the opportunity to submit these comments. Please contact me if you have any questions.