

Session: New Horizons in Education (Tuesday morning, 12/6/11)

“Nanomaterial Safety in Academic Settings”

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To ensure that nanotechnology remains a driving force for discovery and economic development for decades to come, the nanoscience and engineering community must play an active role in defining and reducing possible risks associated with this important new technology. In the University of California Center for Environmental Implications of Nanotechnology (UC CEIN), one of our primary goals is to elucidate how physicochemical properties of engineered nanomaterials influence the biological and environmental activity of nanomaterials and hence to elucidate core principles that will enable the development of next generation materials that retain their desired activities but are inherently safer by design. While our understanding of how to predict and reduce the hazards of nanomaterials is still in its infancy, there exists compelling evidence in the scientific literature to suggest that some (but certainly not all) nanomaterials pose threats to human health and the environment. Despite the current uncertainty about which new nanomaterials may be harmful to the people who make and characterize them, as mentors of emerging scientists and engineers, we all feel a moral imperative to ensure that the people we train are being adequately protected *now*. As scientists, we also want to ensure that policies, regulations, and practices accurately reflect the most current understanding of the hazards and mechanisms of exposure for nanomaterials. Here, I review the latest and best science in the field of Nano Occupational Health and Safety and different “guidance documents” for safe handling of nanomaterials that are currently available. In addition, I will present a “Nanotoolkit” for academic researchers who work with nanomaterials that was developed by the *California Nanosafety Consortium of Higher Education* as well as a comprehensive set of training materials for researchers that are being developed by the UC CEIN based on the Nanotoolkit. We anticipate that the Nanotoolkit will appeal both to researchers themselves and to Environment Health and Safety professionals in academic institutions because it that focuses on easy steps for researchers can take to lower their own risk of exposure to nanomaterials and to decrease the possibility of inadvertently releasing materials that may be hazardous into the environment.