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“Nanomedicine: On a Nano-mission to Have a Giga-impact”

Keynote Talk

**Donald T. Haynie, PhD
Vice-president of Research and Development
Chief Scientific Officer
Artificial Cell Technologies, Inc.
Science Park at Yale
New Haven, Connecticut
USA**

The science and engineering of nanometer-scale objects, called nanotechnology, is beginning to affect multiple areas of medicine. Research and development at the nanoscale is providing scientists, engineers and clinicians with an ever greater understanding of how the human body works and how diseases develop. Implementation of this knowledge in terms of new medical products and treatments will require the development of a new generation of biomaterials. It is increasingly important for medicine to control the structure of such materials at the nanometer scale, and to be able to add novel properties as desired for diagnosis, imaging, drug delivery or surgery. This talk will summarize the recent work and views of nanomedicine researchers, developers of new “smart” or functionalized nanomaterials, government experts and business specialists in nanomedicine. The aim will be to provide a sense of the great excitement that surrounds this fascinating topic, sub-areas in which there are realistic near-term prospects for significant technology development and commercialization, and possible positive and negative consequences of the interaction of nanostructured materials with biological structures on different length scales.