



FIRST INTERNATIONAL NANOTECHNOLOGY CONFERENCE ON COMMUNICATION AND COOPERATION

Abstract

Why Nanotechnology Forces us to change how we approach ethics and technology policy

Nanotechnology concerns a broad range of science and technology, which has as a common motif the understanding and manipulation of matter in the 1-100 nm range. At one level, it can be taken as a general heading for specific technologies in areas like nanoelectronics and molecular medicine. However, beyond these specific technologies, nanotechnology also refers to a broad cluster of emergent capacities in science, and with them, a new mode of scientific research that involves integration across scales, data modalities, and disciplines. When it is coupled with equally transformative developments in the information sciences, biomedicine, and cognitive sciences, “nano” becomes a symbol for a radically new future lying upon our near-term horizon. Ethical reflection and public policy need to appreciate and account for these multiple levels of meaning. Such policy needs to clarify the broader vision of nanotechnology, steering a middle course between skepticism and hype. It also needs to clarify the challenges of education and infrastructure, so that the knowledge-base and workforce capacity are available, and so all may benefit from the opportunities that lie ahead. Most significantly, ethics and policy must be interwoven with the fabric of research and development, and we need to move beyond an older model, where the cultures of research and those of policy and the market are disconnected. The ethical and policy challenges will be illustrated in the area of nanomedicine.