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NIST Role in Advancing Innovation

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According to the National Innovation Initiative, a report of the Council on Competitiveness, innovation will be the single most important factor in determining America's success through the 21st century. NIST mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology – in ways that enhance economic security and improve the quality of life for all Americans. NIST innovations in measurement science and technology often become the basis for new industrial capabilities. Several examples of such developments will be discussed, including the development of techniques for manipulation and measurement of biomolecules which may become the building blocks for molecular electronics; expansion of the frontiers of quantum theory to develop the field of quantum computing and communication; development of atomic scale measurement capabilities for future nano- and molecular scale electronic devices; development of a lab-on-a-chip that can detect within seconds trace amounts of toxic chemicals in water, or can be used for rapid DNA analysis; and standards to facilitate supply chain interoperability.