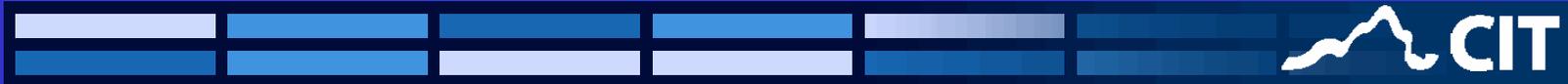


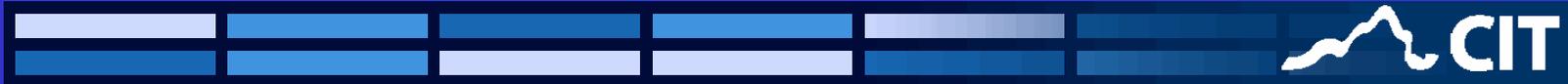
Chesapeake Nanotechnology Initiative

Presented to
JCOTS Nanotechnology Advisory Committee
by
Nancy Vorona
June 30, 2005



Agenda

- Why Nanotechnology?
- Nanotechnology in Use
- The Need for Regional Collaboration
- Key Resources
- Laying the Groundwork
- The Initiative
- First / Next steps
- Objectives for 2005

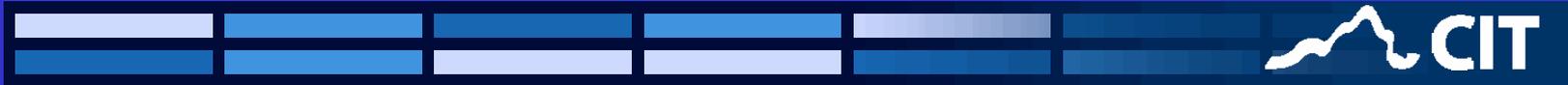


Why Nanotechnology?

The Opportunity

The U.S. government will invest approximately \$1 billion in nanotechnology research and development (R&D) in the coming fiscal year.

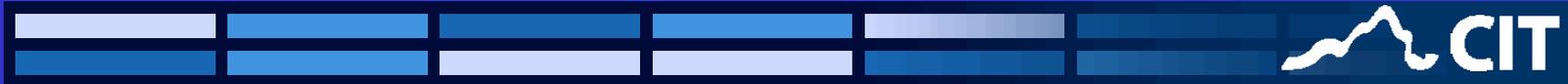
According to Lux Research, nanotechnology R&D funding was estimated to reach \$8.6 billion worldwide in 2004 – with approximately half of these funds coming from government sources and half from the private sector.



Why Nanotechnology?

The Market

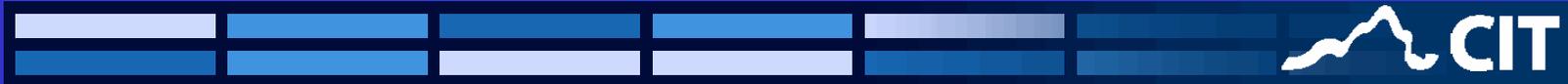
According to National Science Foundation reports, worldwide industrial production in nanotechnology sectors is estimated to exceed \$1 trillion in 10-15 years, requiring about 2 million nanotechnology workers.



Nanotechnology in Use

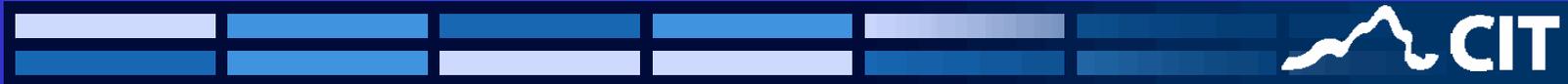
Nanotechnology breakthroughs include: lighter, stronger vehicle bodies, self-repairing parts, microscopic sensors, super-hard cutting tools and improved fibers, films and coatings.

In the world of medicine, nanotechnology will take diagnostic capabilities to a new level of accuracy, expand therapies for a variety of cancers, treat degenerative diseases, drive artificial muscles through neural circuitry, repair damaged retinas with implants, and develop entirely new drug delivery systems.



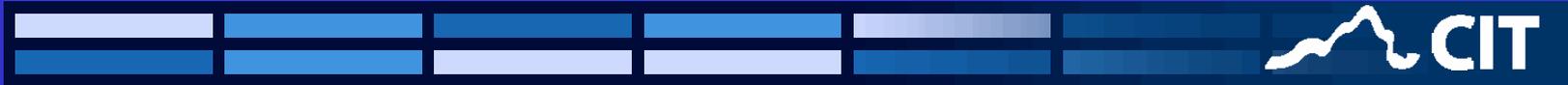
The Need for Regional Collaboration

- Field is cross-disciplinary
- Sophisticated infrastructure requirements
- Broader political support base
- Global competition necessitates partnering



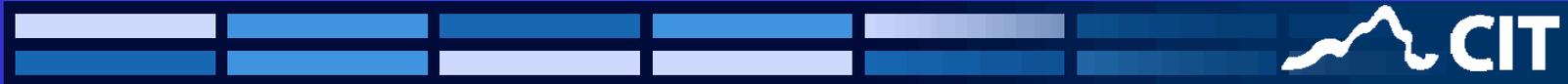
Key Resources – Federal Agencies & Institutions

- National Institutes of Health
- National Institute for Standards and Technology
- National Science Foundation
- Naval Research Laboratory
- Department of Defense
- NASA Goddard Space Flight Center
- NASA Langley Research Center
- Jefferson Lab
- National Nanotechnology Coordination Office



Key Resources – Academic & Research Institutions

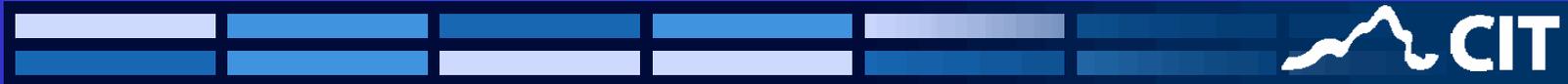
- George Mason University
- Georgetown University
- Howard University
- Johns Hopkins University
- University System of Maryland
- University of Virginia
- Virginia Commonwealth University
- Virginia Tech



Laying the Groundwork

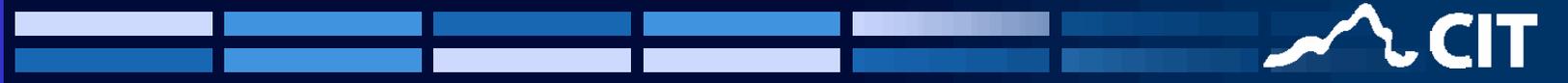
Numerous individuals and organizations have contributed to the development of this initiative.

- Numerous business and scientific meetings held across the region
- Regional brainstorming meeting held at University of Maryland College Park
- Ad hoc working group met to advance regional initiative and drafted proposed mission and memorandum of agreement
- Agreement reached May 31, 2005 to form the Chesapeake Nanotech Initiative



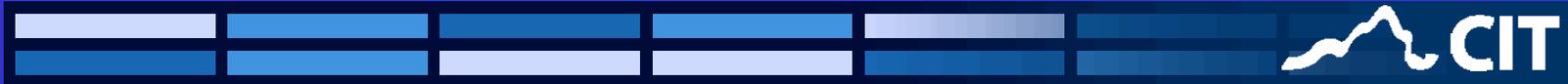
Agreement to Collaborate

On May 31, 2005, Maryland Governor Robert L. Ehrlich, Jr., Virginia Governor Mark R. Warner and District of Columbia Mayor Anthony A. Williams agreed to sign a memorandum of agreement to create the **Chesapeake Nanotechnology Initiative** and collaborate on the development of a nanotechnology business cluster.



Press Coverage

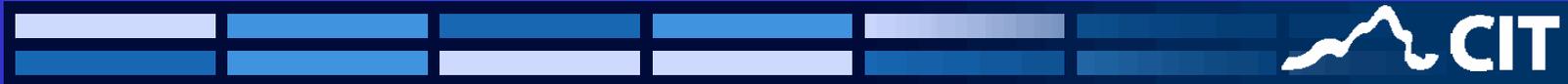
- The Washington Post, June 2, 2005
- The Baltimore Sun, June 2, 2005
- Smalltimes.com, June 2, 2005
- Baltimore Business Journal, June 1, 2005
- Richmond Times-Dispatch, June 1, 2005
- NewsChannel 8, June 1, 2005
- ABC 7, WJLA-TV, June 1, 2005
- The Baltimore Sun, June 2, 2005
- The Gazette, June 3, 2005



The Chesapeake Nanotech Initiative

The Chesapeake Nanotech Initiative (CNI) is a coalition of science, technology and business leaders — from private industry, academia, and government — harnessing the substantial resources of the region to:

- cultivate excellence in nano-scale science and engineering
- create links between leading scientists and industry visionaries
- support national research objectives
- help define and develop commercial markets for nanotechnology.



CNI – Draft Vision Statement

For the region encompassing Maryland, Virginia and Washington, D.C. to become a

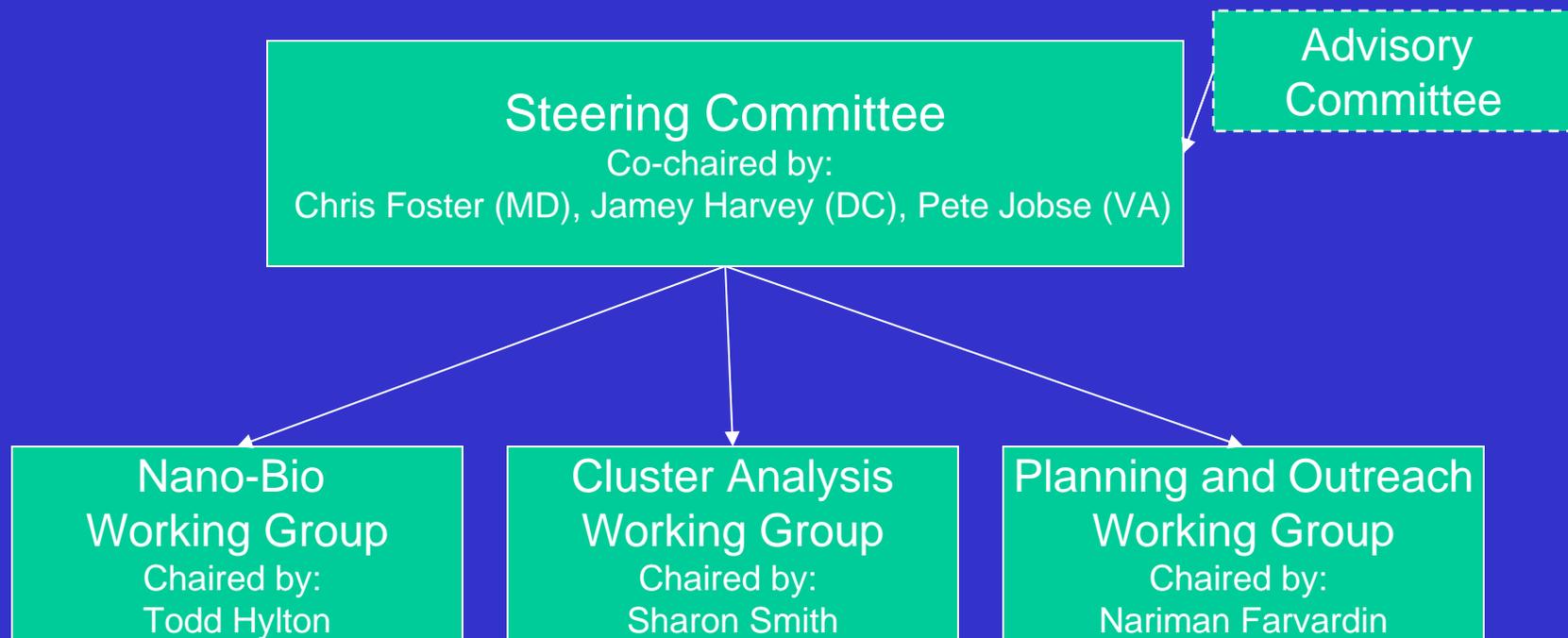
...**recognized global leader** in the discovery, development, and commercialization of nanotechnology

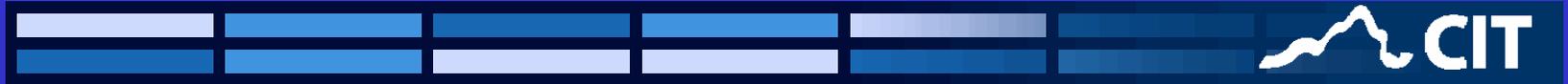
...by **accelerating** the development and use of nano-scale science and engineering

...to **treat and cure** disease, **protect** individual safety, **advance** national security and defense

...and **drive** future economic growth.

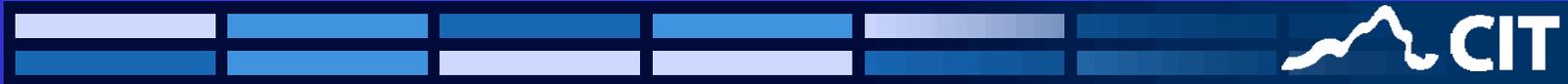
The Initiative – Structure





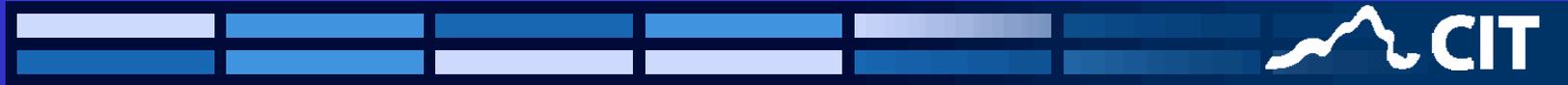
Steering Committee – Policymakers

- **Chris Foster**, Chief Scientist and Deputy Secretary, Maryland Department of Business & Economic Development (co-chair)
- **Pete Jobse**, President, Virginia's Center for Innovative Technology (co-chair)
- **Stanley Jackson**, Deputy Mayor for Planning and Economic Development, District of Columbia



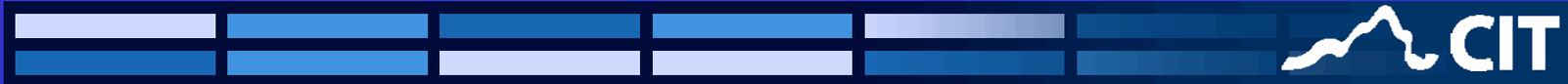
Steering Committee – Academic and Federal Research Directors

- **Nariman Farvardin**, Dean, A. James Clark School of Engineering, University of Maryland
- **Lisa Friedersdorf**, Director, Virginia Nanotechnology Initiative
- **Peter M. Hughes**, Chief Technologist, NASA Goddard Space Flight Center
- **James S. Murday**, Chief Scientist, Office of Naval Research
- **Jeffery A. Schloss**, Program Director, Technology Development Coordination, National Human Genome Research Institute, NIH



Steering Committee – Industry Experts

- **Steve Danziger**, Program Manager, Business Development, BAE Systems
- **Todd Hylton**, Director, Center for Advanced Materials & Nanotechnology, SAIC
- **Robert G. Menzi**, Chief Operating Officer, Protiveris
- **Sharon L. Smith**, Director, Advanced Technology, Lockheed Martin Corporation



First / Next Steps

Phase 1 (June-July 2005)

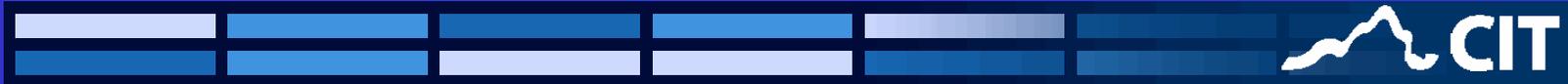
- Launch Initiative
- Steering Committee established
- Working Groups established and convened

Phase 2 (November-December 2005)

- Working Groups report initial recommendations
- Steering Committee approves and refines recommendations

Phase 3 (January 2006)

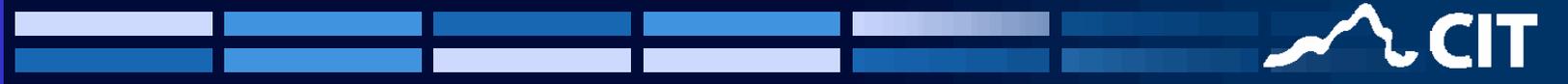
- Working Groups begin implementation of recommendations
- Steering Committee evaluates opportunities to expand scope and impact of Initiative



Objectives for 2005

Working Groups will deliver recommendations for:

- Implementing best practices for furthering the development of the nanotechnology community and business cluster
- Accelerating nano-bio research, product and company development
- Defining additional nanotechnology specific disciplines for review



CHESAPEAKE NANOTECH INITIATIVE

www.chesapeakenanotech.org