

# NIH: INVESTING IN INNOVATION THROUGH RESEARCH

## A Record of Accomplishment

- **Human Microbiome Project:** Targeting the collective genomes of all the microorganisms in or on the human body, this project has the potential to transform scientific understanding of human health and to prevent, diagnose, and treat a wide range of conditions.
- **Epigenomics Project:** This initiative to analyze epigenetic changes across many genes in a cell or an entire organism will advance our knowledge of the human genome and help us better understand the role of the environment in regulating genes that protect our health or make us susceptible to disease.
- **Structural Biology Roadmap:** An interdisciplinary program that is creating a gallery of three-dimensional shapes of proteins in the body. Along the way, it is catalyzing what was once a hit-or-miss process into an organized, coordinated, systematic, and streamlined routine, enabling researchers to clarify the role of protein shape in health and disease.
- **Support for High Risk/High Impact Research:** As part of its commitment to support high risk/high impact research, innovation in research, and funding for early-career investigators, NIH provides brilliant emerging scientists with the resources, time, and freedom to pursue creative ideas. For example, the Director's Pioneer Award Program supports individual scientists of exceptional creativity who propose pioneering, and possibly transforming approaches, to major challenges in biomedical and behavioral research. The NIH Pathway to Independence Award supports scientists at the early part of their careers while maintaining the agency's "pipeline" of future-generation researchers who will bring fresh ideas and innovative perspectives to the research enterprise. The New Innovator Awards Program encourages and rewards bold and highly innovative research approaches that have the potential to produce solutions for broad, important problems in biomedical and behavioral research. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards support innovative research with commercial potential and provide small businesses and partnering universities an effective means for translating research findings into tangible products and services that can improve human health.
- **Molecular Libraries:** A nationwide consortium of 10 small molecule screening centers that provides investigators with a comprehensive set of modulators of a majority of the genes and functions of humans and other organisms; free access to discoveries about the chemical structures and biological activities of small molecules (PubChem); and new tools and technologies to better serve investigative needs.
- **Clinical and Translational Science Awards:** Designed to transform clinical and translational research, the initiative represents the first systematic change in NIH's approach to clinical research in 50 years. It will include partnerships with 60 institutions by 2012.
- **Public Access to NIH-funded Published Research:** An unprecedented policy designed to increase the public's access to health-related publications resulting from NIH-funded research. Publications are made available in a web-based archive managed by the National Library of Medicine.

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## Strategies for the Future

- NIH must remain nimble and responsive to new opportunities and challenges. Toward this end, the NIH continues vigorous implementation of the ***NIH Roadmap for Medical Research***, a set of cross-cutting initiatives responding to emerging scientific needs and opportunities.
- ***The Clinical and Translational Science (CTSA) program*** is an unprecedented effort to create the human and physical infrastructure necessary for rapidly and efficiently translating basic research discoveries into better treatments for patients. The CTSA programs will serve as magnets that concentrate basic, translational, and clinical investigators, community clinicians, clinical practices, networks, professional societies, and industry to facilitate the development of new professional interactions, programs, and research projects. This program will give research institutions more freedom to foster productive collaboration among experts in different fields, lower barriers among disciplines, and encourage creative, new approaches that will deliver better treatments to patients with complex and chronic medical diseases. Ultimately, patients will be better served because new prevention strategies and treatments will be developed, tested, and brought into medical practice more rapidly.
- ***Opportunities for Public-Private Partnerships*** to leverage federal investments with private resources, identify new models and paradigms that require cross-sector expertise (e.g., personalized medicine), streamline and prevent reduplication of efforts and expenses (e.g., development of public resources of data, samples and materials, platforms and analytics) and enhance educational experience and promote workforce development. Examples of ongoing public private partnerships include the Alzheimer Disease Neuroimaging Initiative, the Osteoarthritis Initiative, the Genetic Association Information Network, and the Biomarkers Consortium.
- ***The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs*** are set-aside programs (2.5% and 0.3%, respectively, of an agency's extramural budget) for domestic small business concerns to engage in Research/Research and Development (R/R&D) that has the potential for commercialization. NIH is developing a series of initiatives to foster and assist its SBIR/STTR awardees in developing effective commercialization strategies. Through a menu of technical assistance programs targeted to companies' individual entrepreneurial and business training needs, these programs provide commercialization assistance and facilitate partnering opportunities that can be essential in helping small businesses cross the proverbial commercialization "valley of death." Examples of ongoing programs include:
  - Commercialization Assistance Program (CAP)
  - Niche Assessment Program (NAP)
  - Manufacturing Assistance Program (MAP)
  - NIH Pipeline to Partnerships

## Useful Resources

- ***The NIH Roadmap*** provides a framework of the strategic investments that NIH needs to make to optimize its entire research portfolio: [www.nihroadmap.gov](http://www.nihroadmap.gov)
- ***Specific NIH Programs:***
  - The Clinical and Translational Science (CTSA) program: [www.ctsaweb.org](http://www.ctsaweb.org)
  - The NIH Public Partnership Program: [www.ppp.od.nih.gov](http://www.ppp.od.nih.gov)
  - Small Business (SBIR/STTR): [www.grants.nih.gov/grants/funding/sbir.htm](http://www.grants.nih.gov/grants/funding/sbir.htm)
- ***NIH hosts outstanding seminars daily:*** [www.calendar.nih.gov/app/MCalWelcome.aspx](http://www.calendar.nih.gov/app/MCalWelcome.aspx). Many are available by web videocast, both live and archived: [www.videocast.nih.gov/PastEvents.asp](http://www.videocast.nih.gov/PastEvents.asp)
- ***NIH News and Events:*** [www.nih.gov/news](http://www.nih.gov/news)
- ***NIH Website:*** [www.nih.gov](http://www.nih.gov)