

Translational Medicine

From Discovery to Health

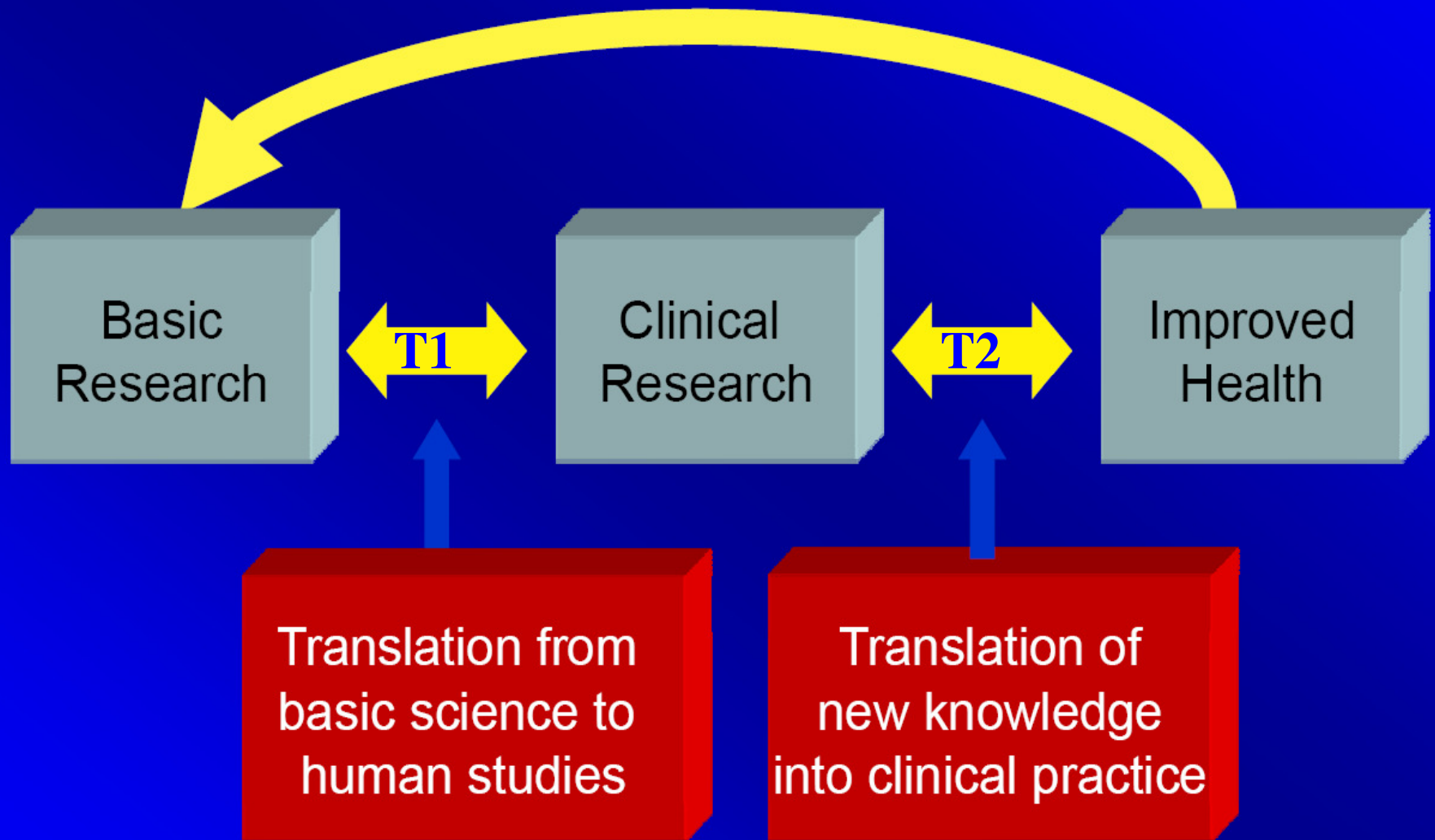
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Clinical and Translational Science*

Translational Medicine

Translational Medicine describes the steps between a fundamental discovery and its application in clinical medicine, from bench to bedside to the practice in community and vice versa

Translational Medicine



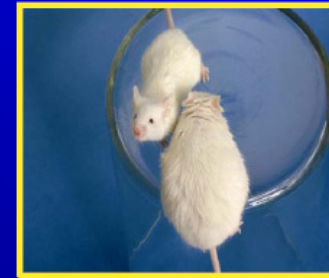
Adapted from Sung et al. (2003) JAMA, 289, 1278-89.

Accelerating Research from Discovery to Improved Health

science education



community engagement

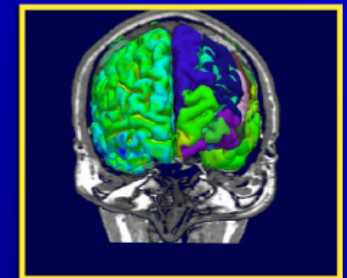


animal model resources

Community



Pre-clinical



imaging & informatics advances

research capacity & training



clinical research support

Clinical

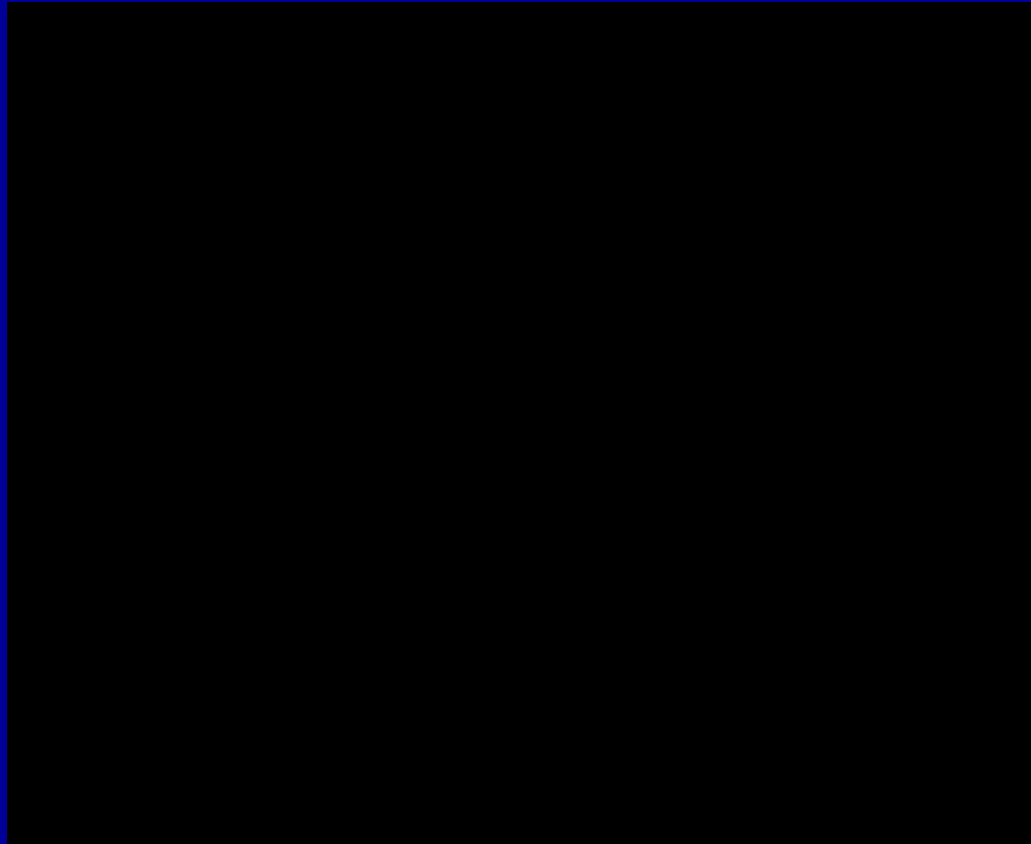
The Current Buzz-Word

Interest From All Corners

- Google Search (3/5/2010)
 - Translational Medicine 1,840,000 results
 - Translational Research 2,020,000 results
- YouTube Search (3/5/2010)
 - Translational Medicine 140 videos
 - Translational Research 260 videos

Translational Medicine

A Catch Phrase



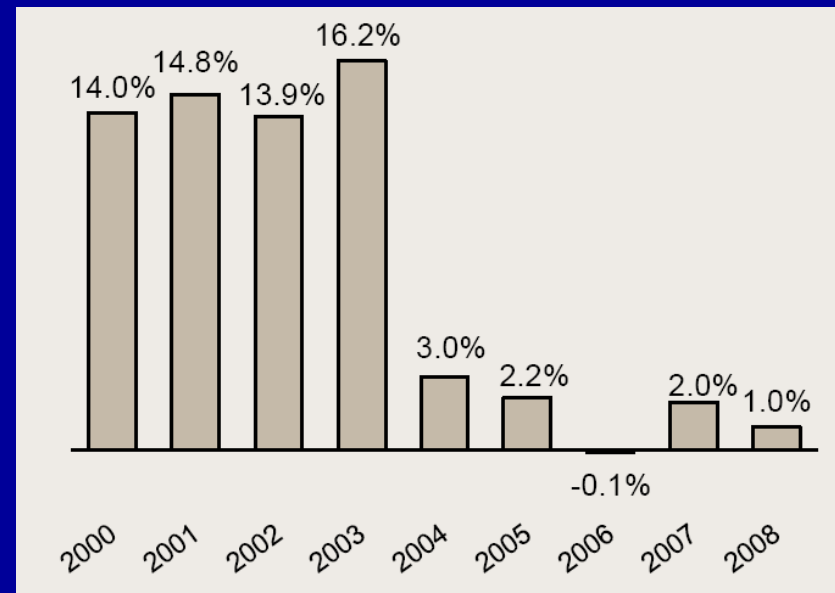
Stake Holders Motivations

“Pursuing The Greater Vision”

- All stake holders seek recognition and prestige
- Universities: Foster pipeline for innovation
- Hospitals: Provide patients with cutting edge treatments and clinical trials
- Industry: Bridging “valley of death” between life sciences discoveries and drug/device development
- Funding agencies/NIH: Cost effective funding with speedy translation to patient benefits

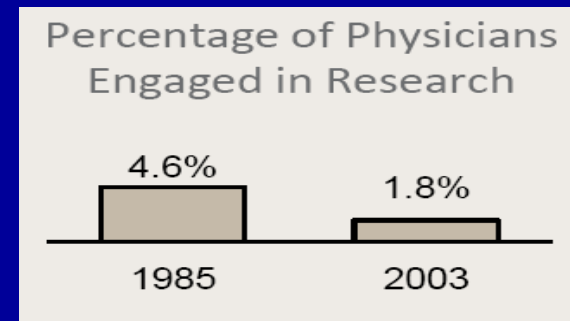
Why Translational Medicine?

- Evolving public health challenges
- Slow speed of translating discoveries
- Changing funding environment



Challenges To Translational Medicine

- Shortage of Translational Researchers



- Academic culture favors individual research contributions
- Silos

Two Different Worlds of Research

“Departments used to contain a mixture of pure physicians, physician-scientists, and even a few basic scientists, all united in their quest to understand and treat human disease. Now, these departments are split. An enormous gap separates those who practice medicine from those who practice science.”

Michael Brown
Recipient, Nobel Prize for Medicine

Challenges To Translational Medicine

- Underdeveloped Translational infrastructure
 - Space design and management
 - Integration of research resources and cores
 - Regulatory and ethics support
 - Bioinformatics support
 - Community engagement support
 - Technology transfer support
 - Data and tissue repositories (Biobank)

Transformative National Movement In Translational Medicine

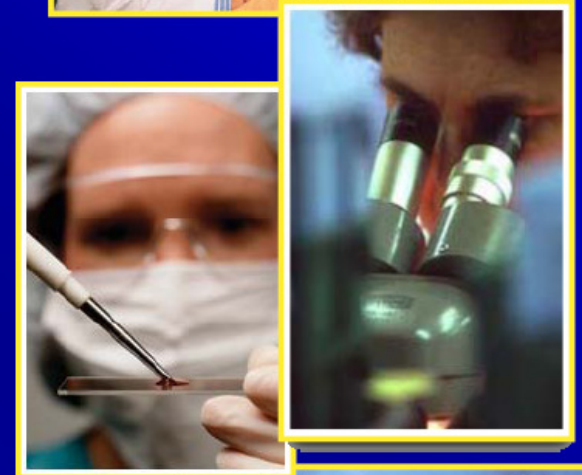
- Academic medical centers: Institutes and centers for translational medicine
- Universities: Clinical and translational science educational programs
- NIH: Road map initiatives for a more efficient and translational biomedical research including establishing a national consortium in clinical and translational research

Institutional Clinical and Translational Science Award RFA

The goal of the Institutional CTSA program is to transform the local, regional and national environment for clinical and translational science, thereby increasing the efficiency and speed of clinical and translational research. This transformation will be achieved by creating an academic home, which can be a center, department, or Institute, comprising faculty and programs that integrate clinical and translational science across multiple departments, schools, clinical and research institutes and hospitals. The C/D/I is expected to include faculty able to conduct original research, develop graduate and postgraduate training curricula and lead programs that integrate clinical and translational science across multiple departments, schools, clinical and research institutes and hospitals.

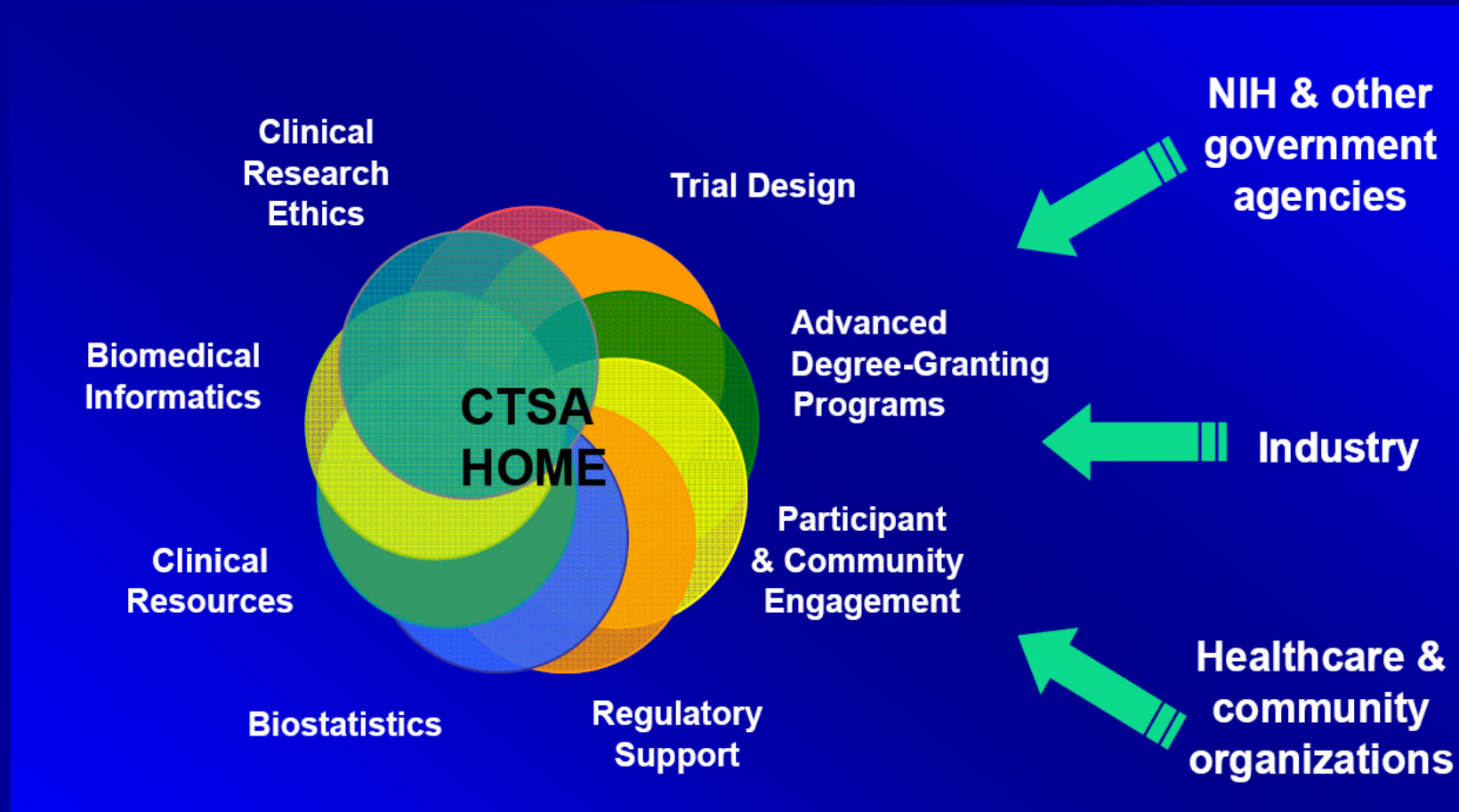
Clinical and Translational Science Awards

- ❑ Eliminate institutional barriers
- ❑ Enhance team science across disciplines
- ❑ Design state-of-the-art informatics tools
- ❑ Improve training and mentoring
- ❑ Build new partnerships with private and public health care organizations



CTSAWeb.org

Clinical & Translational Science Award

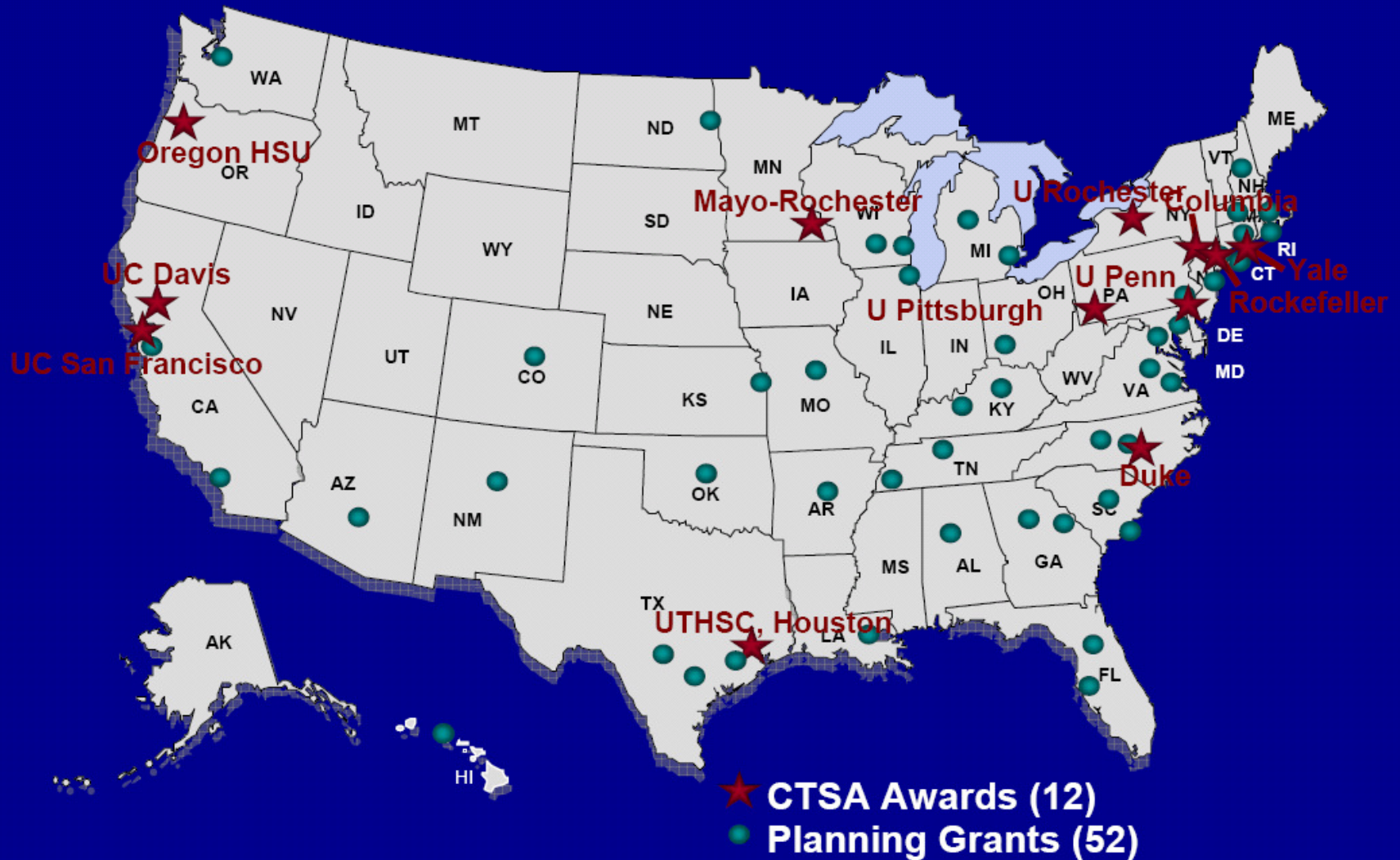


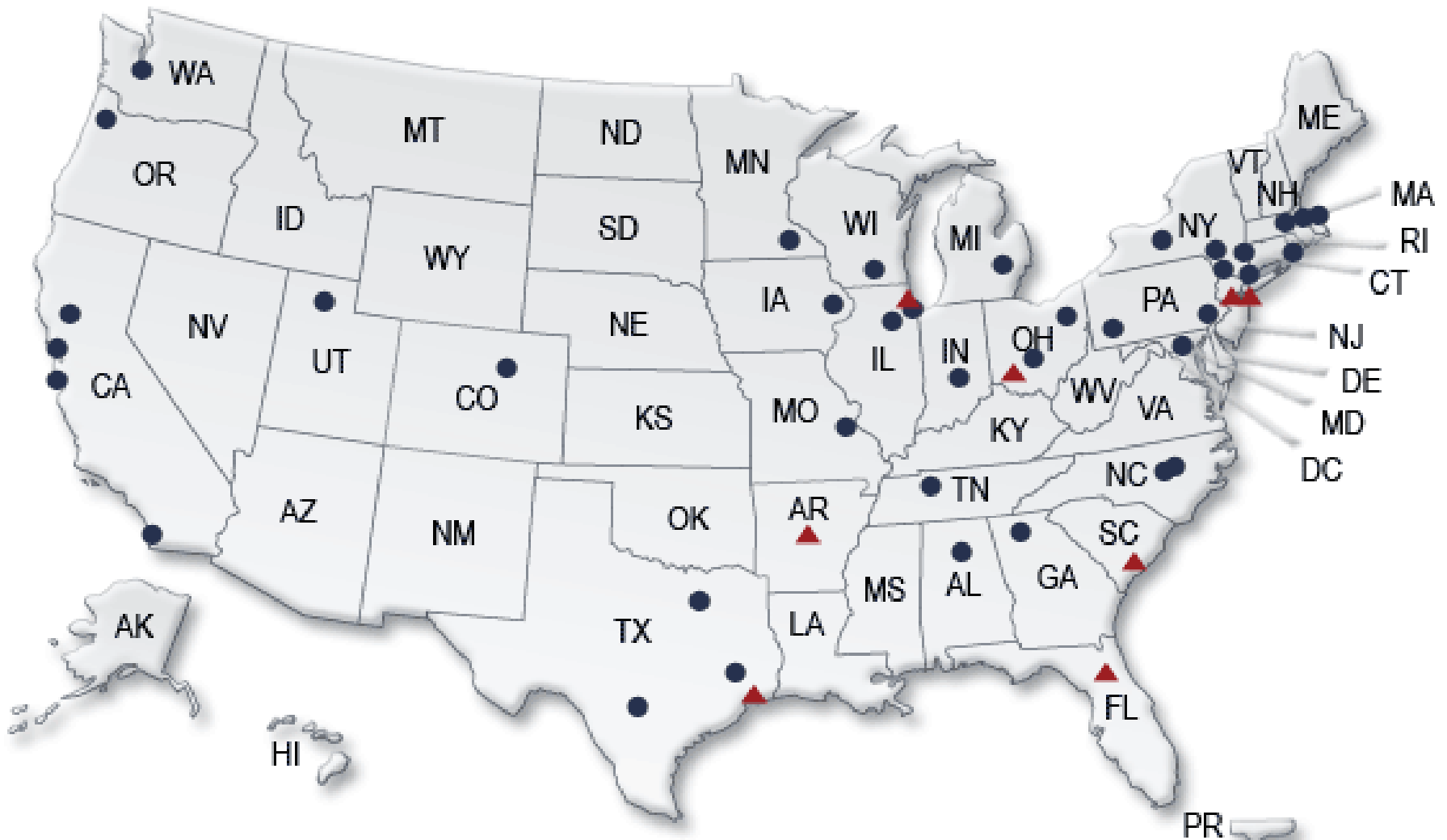
- **12 Academic Health Centers (AHCs) nationwide**
- **52 AHC planning grants to prepare applications to join consortium**
- **In 2012, ~60 institutions will be linked to energize clinical and translational science**



Building A National CTSA Consortium

FY 2006 CTSA Awards & Planning Grants





Participating Institutions

▲ New Members 2009

● Members

MU And Translational Medicine

Capacity For Concept To Completion

- Academic and health affairs on the same campus
- Excellence in life sciences research
- Strong collaborative academic culture
- Rich culture of service to the community
- A national leader in medical education

Unique Preclinical Resources

- Largest academic research reactor in the world
- The only NIH funded national swine resource and research center in the nation
- The second largest research animal diagnostic laboratory (RADIL) in the country
- One of 3 mutant mouse regional resource centers
- One of 12 NCI cancer nanotechnology platforms
- One of 12 sites in the NCI Comparative Oncology Trials Consortium

MU Translational Programs

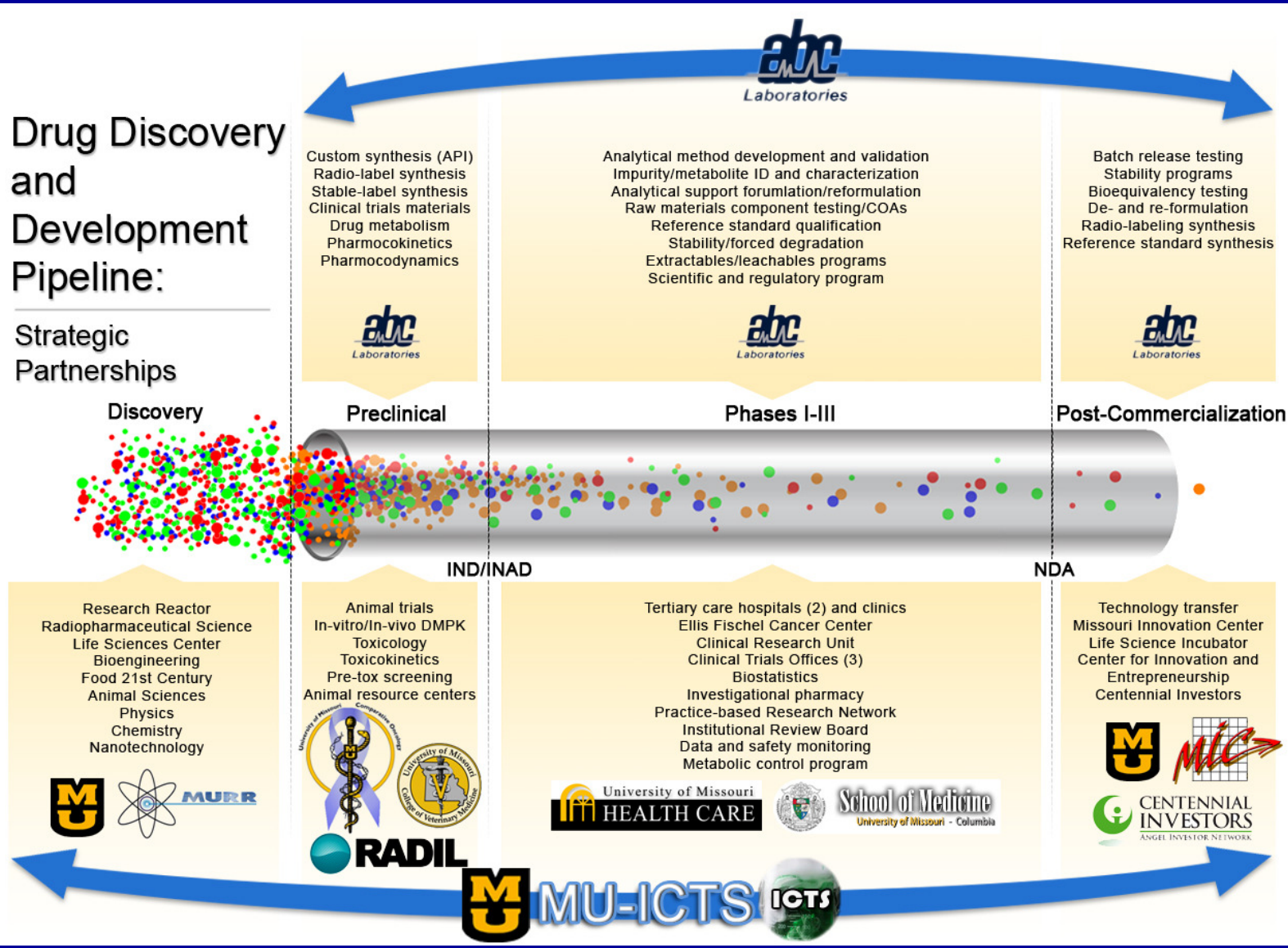
- Radiopharmaceuticals: FDA-approved cancer therapies including Therasphere[®] and Quadramet[®]
- Comparative medicine
- Cardiovascular & microcirculation
- Phytomedicine
- Nanomedicine
- Reproductive biology

MU Institute for Clinical and Translational Science

The vision is to take advantage of MU educational and research assets to create an environment that advances health care through interactions among basic scientists, clinical investigators, patients, community physicians, industry, and other partners to make a meaningful impact on the quality-of-life and the health of the citizens of Missouri, the nation, and the world

Drug Discovery and Development Pipeline:

Strategic Partnerships



Thank You!