



**National Center for  
Research Resources**

NATIONAL INSTITUTES OF HEALTH

*T*ranslating research from basic discovery to improved patient care

# CTSAs in the USA

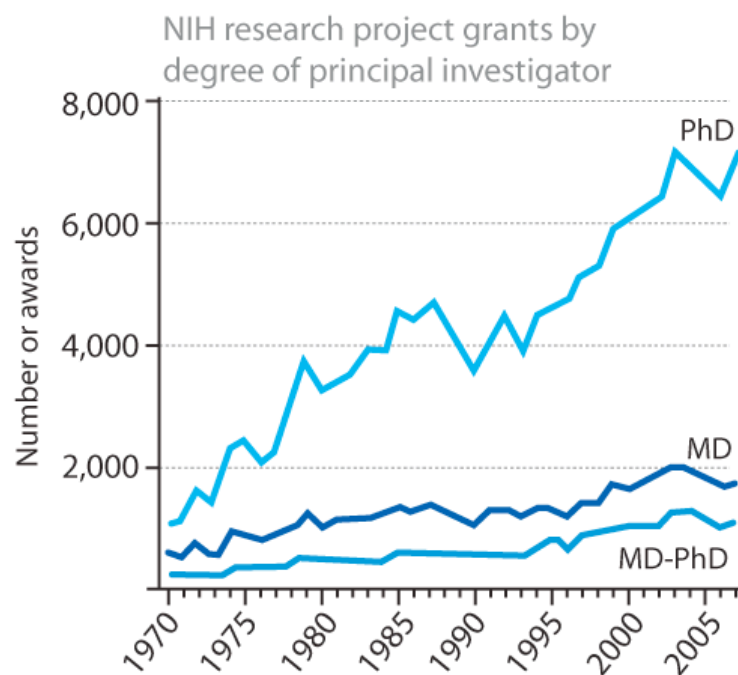
2009 International Symposium  
Global Approaches to Translational Research  
University of Pennsylvania School of Medicine  
April 14, 2009

**Barbara Alving, M.D., MACP**  
Director  
National Center for Research Resources

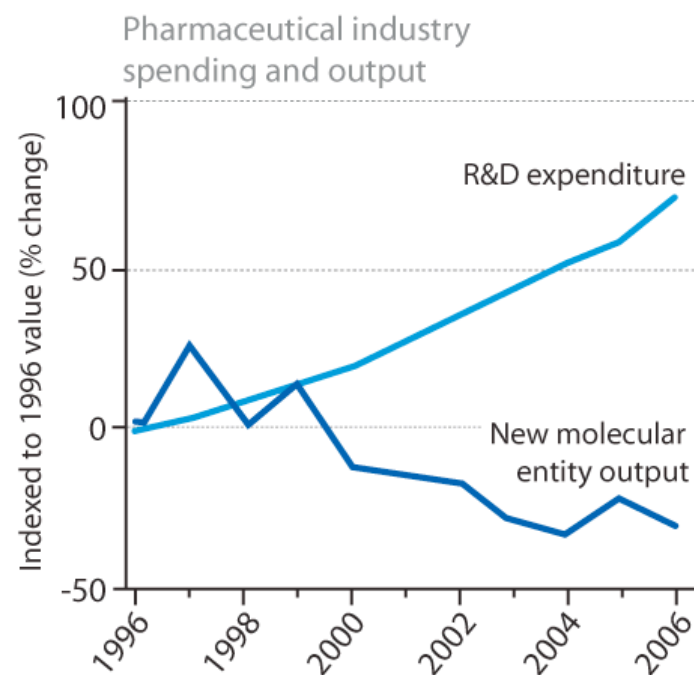


# The Translation Gap

## THE TRANSLATION GAP

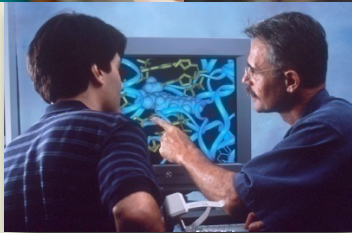
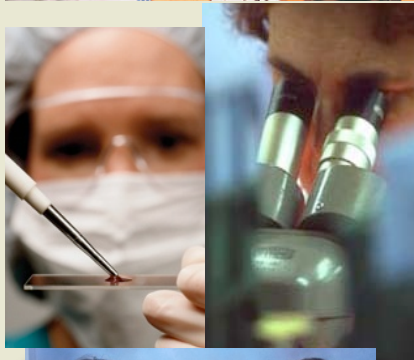


Source: NIH; CMR International & IMS Health



Source: Butler D. Translational research: Crossing the valley of death. *Nature*. 2008;453:840–2.

# Impetus for the CTSA Program



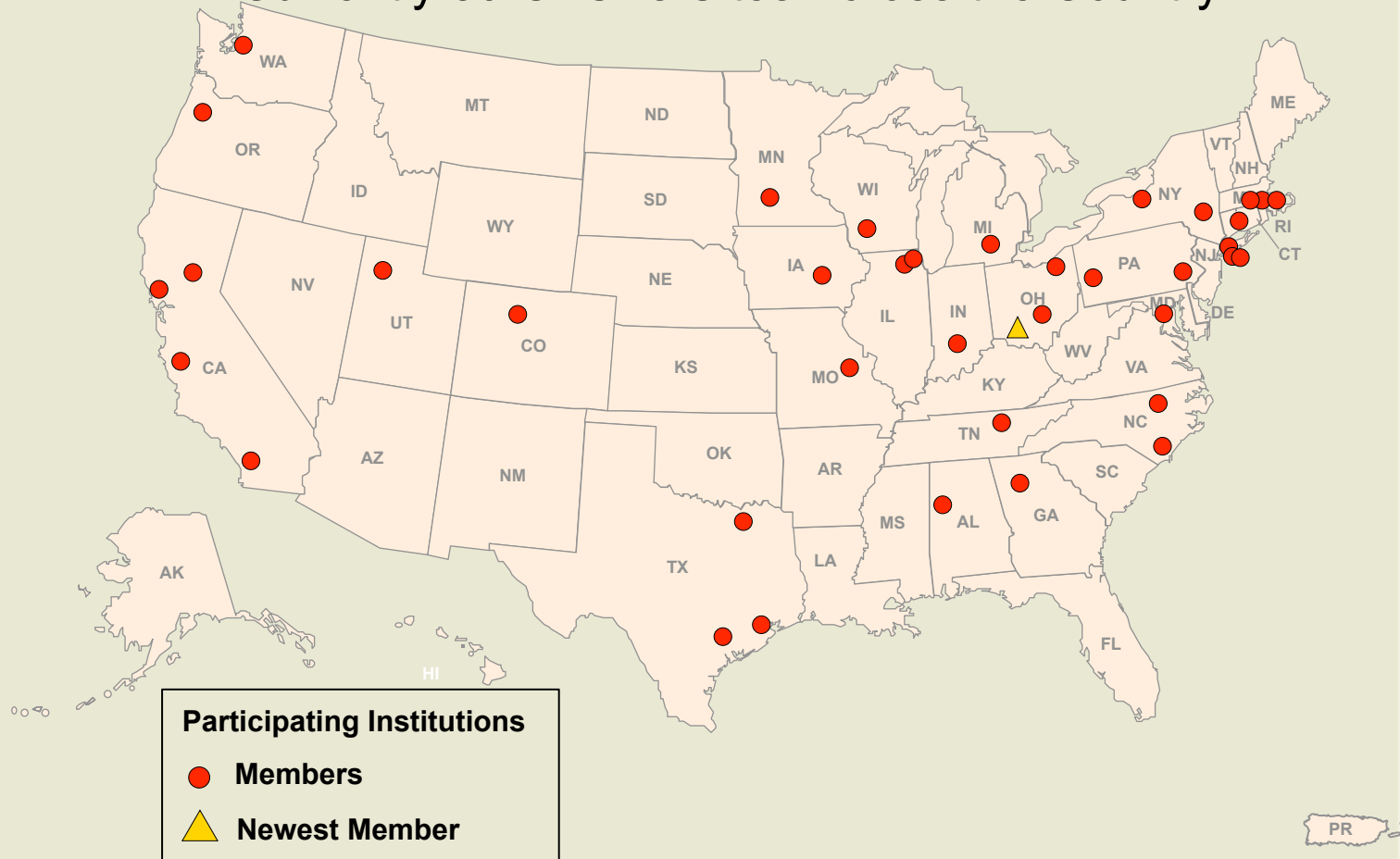
To ensure new discoveries lead to improved public health, clinical science must evolve to better:

- Implement biomedical discoveries
- Develop, test, and bring new prevention strategies into medical practice more rapidly
- Catalyze change - lower barriers between disciplines
- Encourage creative and innovative approaches.

[www.CTSAWeb.org](http://www.CTSAWeb.org)

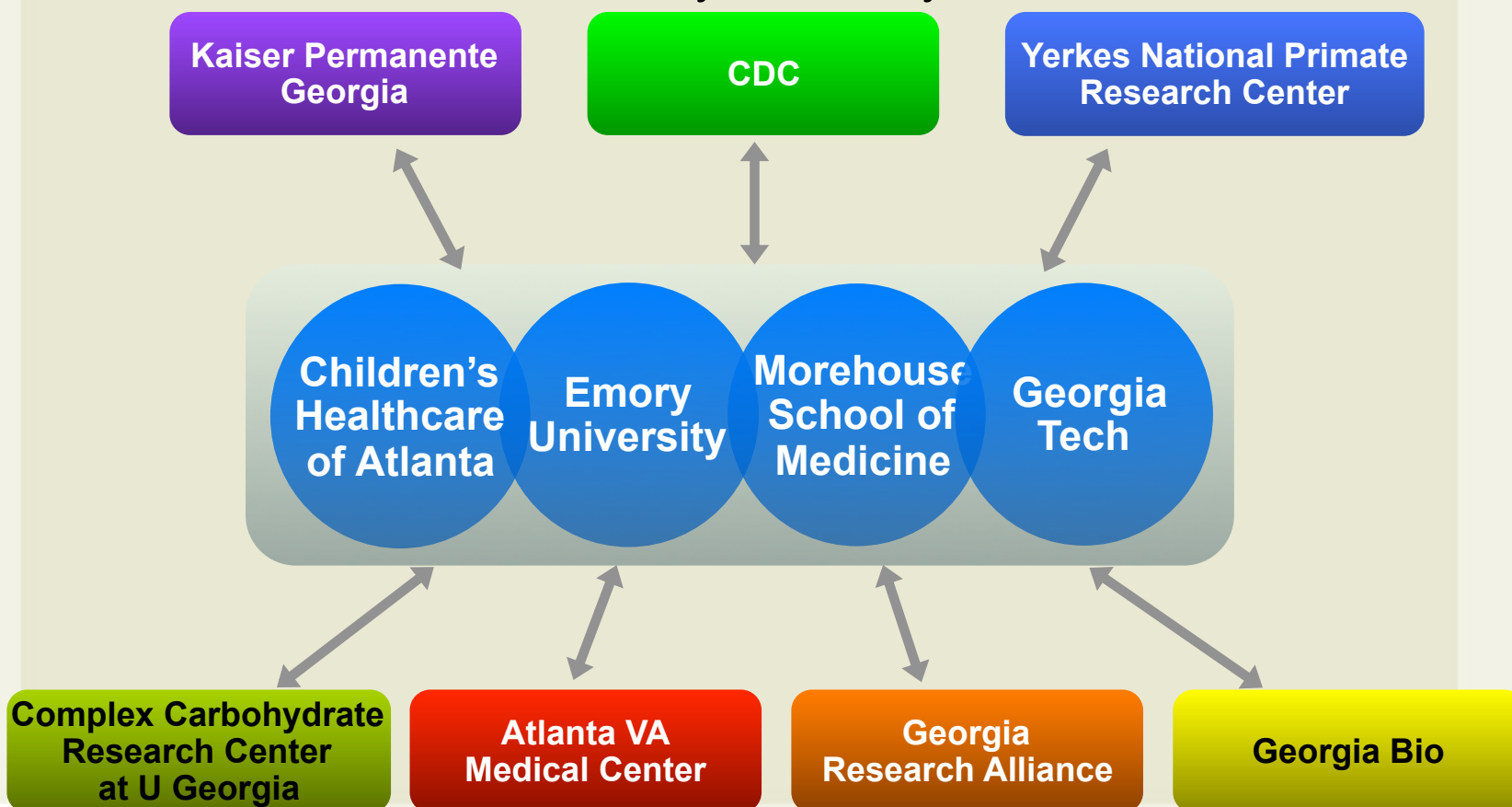
# CTSA: Building a National Consortium

Currently 39 CTSA Sites Across the Country



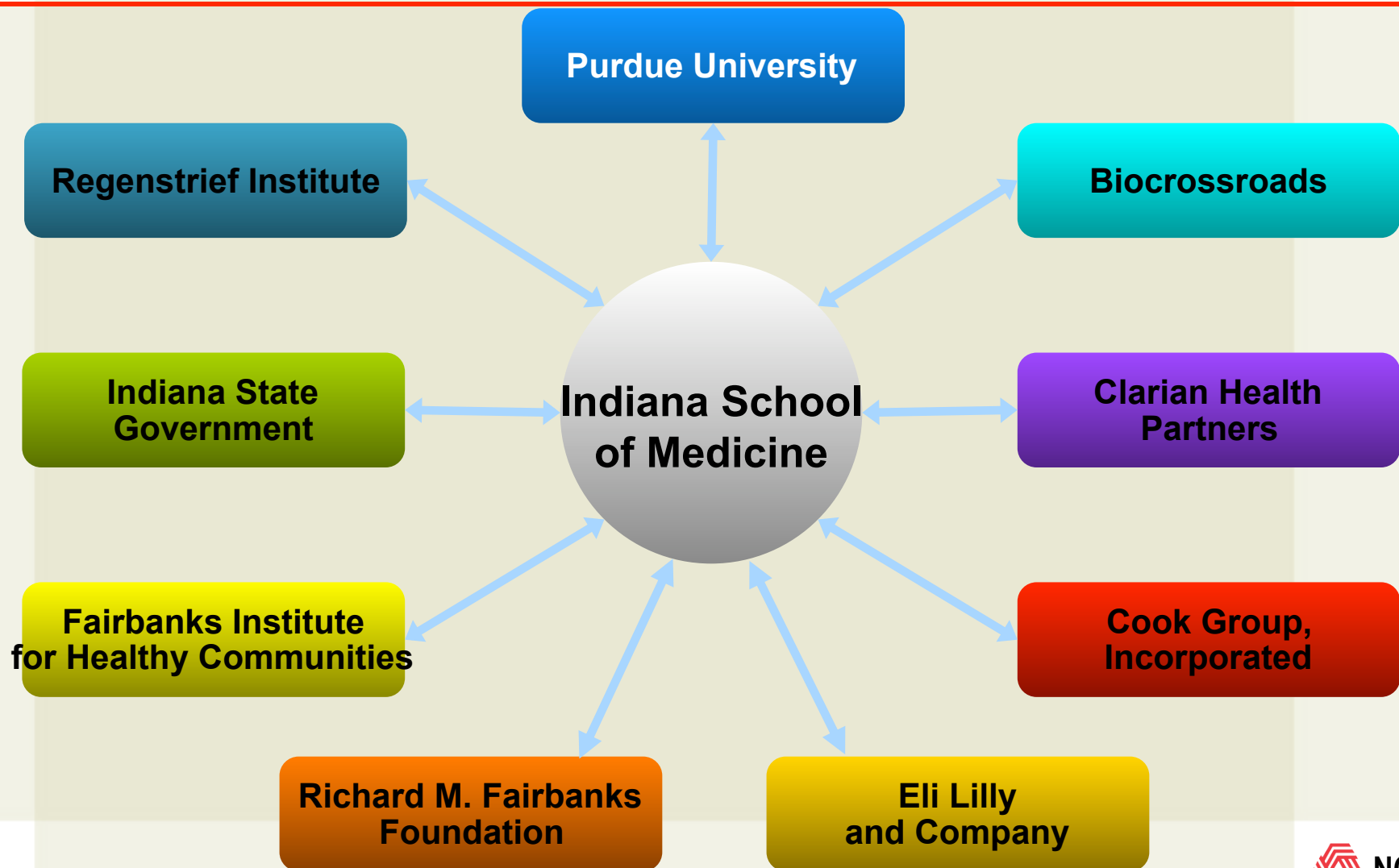
# CTSA – Providing Local Leveraging Opportunities

Atlanta Clinical and Translational Science Institute (Atlanta-CTSI)  
at Emory University



# CTSA – Providing Local Leveraging Opportunities

## Indiana Clinical and Translational Sciences Institute



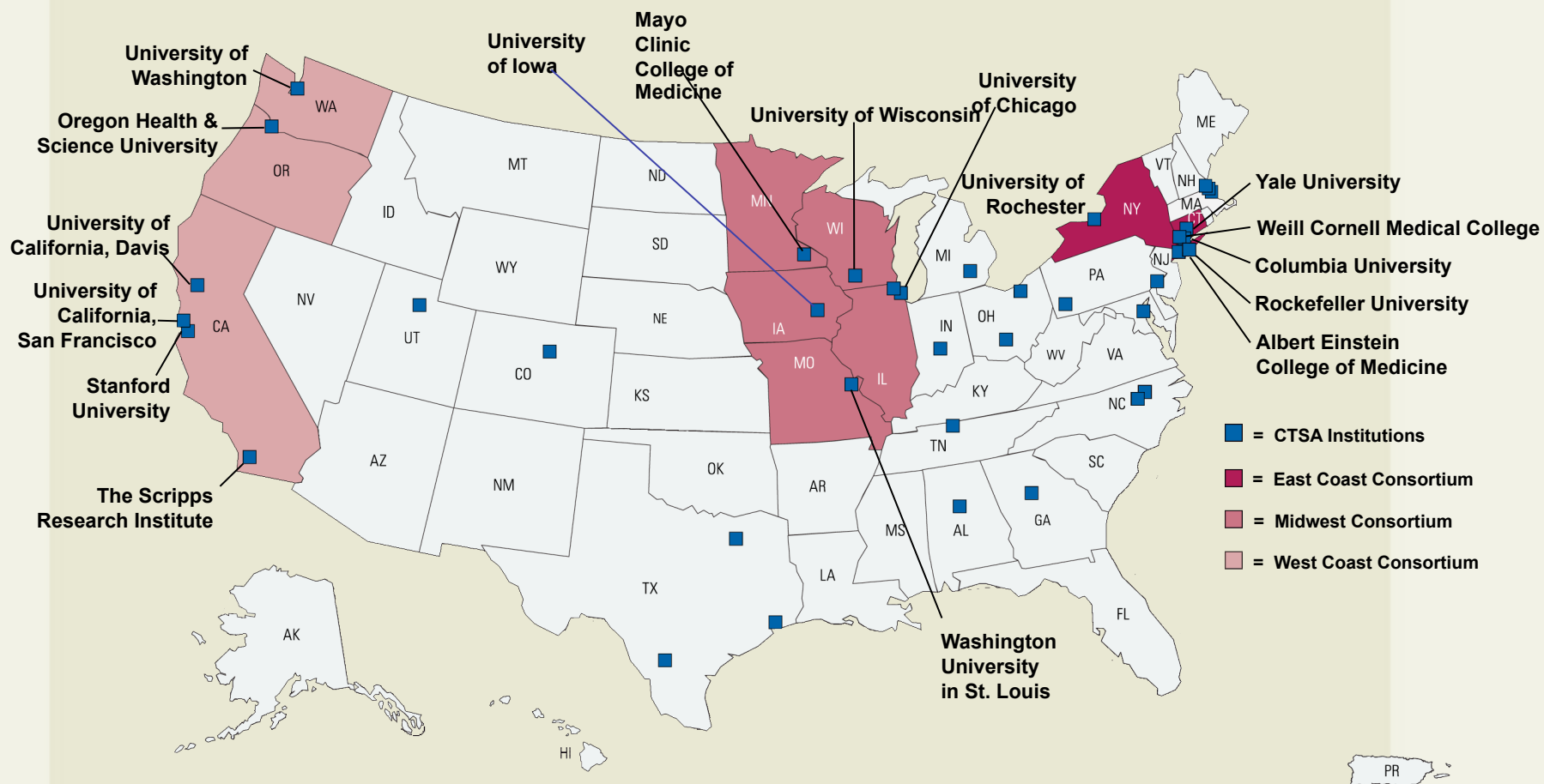
## Regenstrief Institute Medical Informatics

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*The Regenstrief Medical Record System, a dynamic electronic medical record system, has helped physicians manage health care information for over a quarter century and provides unique research opportunities to fellows*

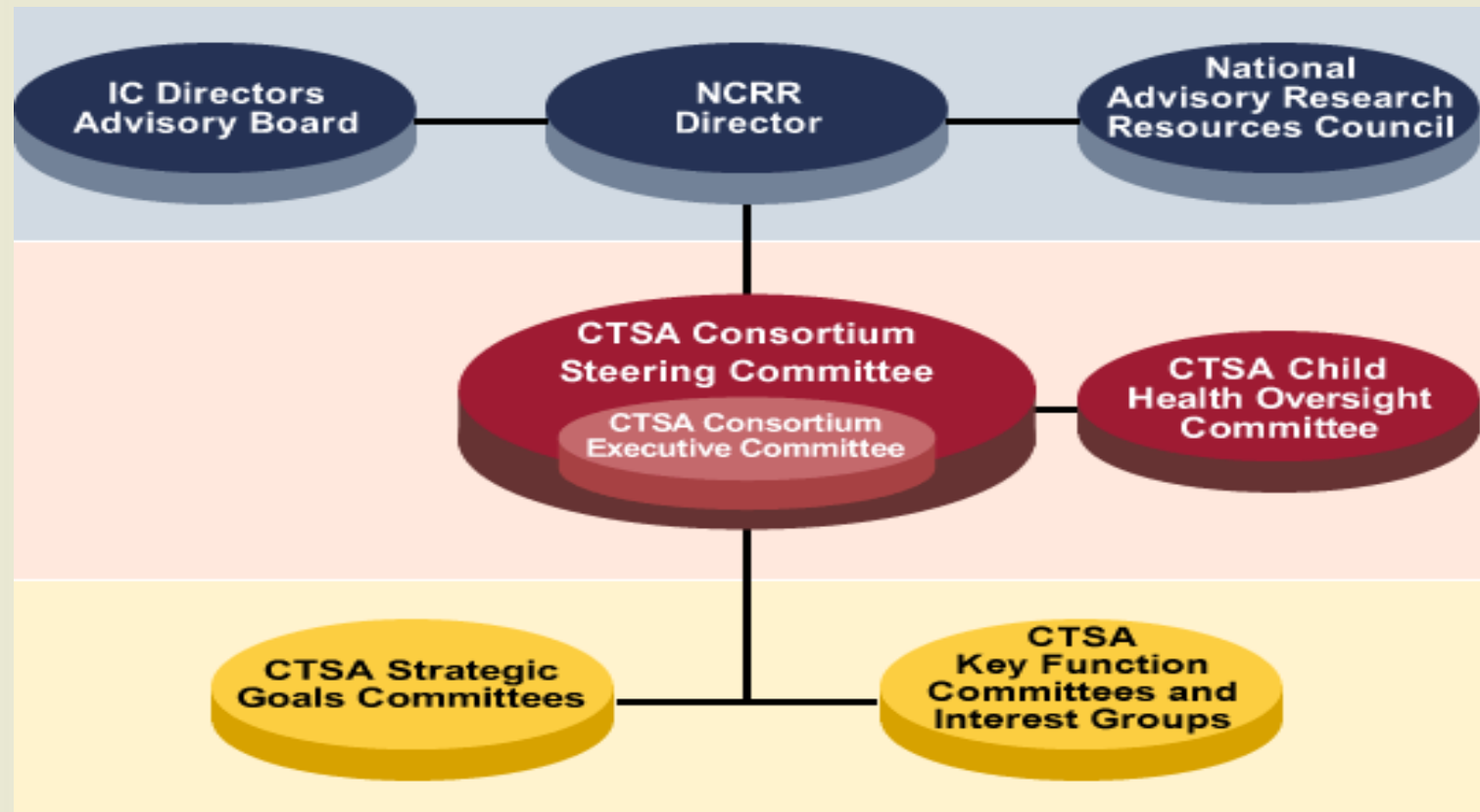
- Led by Director J. Marc Overhage, MD, PhD, Indiana University Professor of Medicine and Regenstrief Professor of Medical Informatics
- Comprise one of the largest medical informatics physician brain trusts in the United States
- Identified information technology, including medical informatics, as a priority area of study to improve the quality of the U.S. health care system

# CTSA – Creating Regional Partnership Opportunities





# CTSA – Creating National Partnership Opportunities



Working as a Consortium, we have established a committee structure to execute the vision and goals of the CTSA program

# CTSA National Strategic Plan Priorities

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## Goal One:

- Enhancing National Clinical and Translational Research Capability
  - Clinical research management
  - Research infrastructure
  - Phenotyping – human and preclinical models

## Goal Two:

- Enhancing Training and Career Development of Clinical and Translational Investigators

# CTSA National Strategic Plan Priorities

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## Goal Three:

- Enhancing Consortium-Wide Collaborations
  - Social networking
  - Inventory of resources
  - Data sharing

## Goal Four:

- Enhancing the Health of Our Communities and the Nation
  - Community engagement
  - Public health policy

## Educational Impact of CTSA Program

- Doubled the clinical and translational training workforce from 2006 - 2008
- Increased the number of regional training interactions among consortium sites
- Awarded a supplement to develop a National CTSA Educational Resource Program (NCERP) that will:
  - Identify, catalog, and assess training modules in clinical and translational research
  - Enhance and broaden training opportunities for clinician-scientists across the CTSA consortium



# Educational Impact of CTSA Program

(Based on 2008 Annual Progress Reports from first 24 CTSA)

Field of Training	# of Investigators	# of Trainees and Scholars
Clinical Disciplines (includes 37 subcategories)	3,948	272
Pediatric Disciplines	516	29
Public Health	317	50
Stats, Res Methods, Informatics	176	10
Genetics	134	9
Allied Health	121	16
Immunology	115	7
Nursing	110	20
Bioengineering	108	10
Neuroscience	108	18
Psychology, non-clinical	93	5
Physiology	77	5
Microbiology and Infect Diseases	69	8
Pharmacology	61	10
Molecular Biology	53	7
Other	250	37
<b>Total</b>	<b>6,256</b>	<b>513</b>

## Multiple Principal Investigators

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- Traditional single-PI model does not always work well for multidisciplinary efforts and collaboration
- Growing consensus that team science would be encouraged if more than one PI could be recognized on individual awards
- Overarching goal: maximize the potential of team science efforts, responsive to the challenges and opportunities of the 21st century

[http://grants2.nih.gov/grants/multi\\_pi/index.htm](http://grants2.nih.gov/grants/multi_pi/index.htm)

# CTSA Consortium Building Connections

## Columbia University Medical Center

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Irving Institute for Clinical and Translational Research  
at Columbia University:

- Helped inspire Columbia neurologist Petra Kaufmann, M.D., to reach outside her discipline to find a collaborator to build an apparatus to help children with spinal muscular atrophy (SMA)
- Partnered with Elisa Konofagou, Ph.D., Assistant Professor of Biomedical Engineering and Radiology to design the prototype
- Resulted in a device to help SMA patients use their arms

# Encouraging and Enhancing Collaboration CTSA Consortium – Informatics Pilots

## Clinical and Translational Information Exchange Environment Informatics Pilots

- Implementation and development of tools for clinical investigators to facilitate small and medium sized research studies
- Enhance the collection and management of data in small and medium sized studies
- Requirements
  - At least three CTSA must collaborate
  - Data and software sharing
  - Must incorporate institutional database support that is flexible, secure, and easily accessible on demand



## Informatics Pilot Projects

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- Three contracts to improve informatics that support small- to medium-sized clinical studies
- Each of the two-year contracts will support a project team representing three or more institutions that are part of the CTSA consortium
- Awards will total up to an estimated \$4 million
- Projects will be led by :
  - Case Western Reserve University, Cleveland, Ohio
  - University of Washington, Seattle
  - Vanderbilt University, Nashville, Tenn.

# Technology Resource Cores Workshop: Designs for Efficient Management and Utilization

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In collaboration with the CTSA consortium, NCRR is planning a 2-day conference in July 2009

- Topics to address include:
- Academic institutions' policies
- Sharing experiences of using cores (Mayo Clinic, for example)
- Service contracts
- Equipment
- Demand for core services
- Personnel
- NIH I/C Issues

# Public-Private Partnerships (PPP) Example: The West Coast Licensing Partnership

Oregon CTSA is part of a group of institutions willing to designate a subset of their technologies for marketing and licensing purposes

- Adds value by bundling related technologies over individual tools and technologies
- Strengthens inter-institutional relationships between member partners
- Increases global access to research tools by promotion of non-exclusive licensing
- Provides simple one-stop licensing of technologies from multiple institutions
- Saves time and money from negotiating multiple license agreements



# CTSA Consortium – Building Connections with Business Schools

CTSA are partnering with business schools to:

- Develop business plans, design, and implement community surveys
- Create innovative cross-educational programs
- Develop case studies to pilot programs
- Collaborate with international colleagues
- Prepare cost analyses
- Protect CTSA-developed patents
- Form industry partnership programs



# CTSA Translational Projects

## Oregon CTSA

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### Industry Partnerships

*OCTRI has established a joint pilot project program with Intel to support development of new multi-sensing devices with health applications*

- Focuses on patients at high risk for stroke and diabetics who may experience hyper- or hypoglycemic emergencies
- Couples state-of-the-art wireless and mobile technology with various sensors to enable earlier detection and treatment of these common and life-threatening diseases
- Initiated a master's of science management program that is geared towards management in the bioscience industry. Current researchers can participate in workshops and seminars that introduce the fundamentals of translating research into commercial ventures and provide a network of entrepreneurs and industry contacts

# CTSA Translational Projects

## University of Washington

*Pilot project collaborations between the Washington CTSA and the Washington National Primate Research Center may lead to a treatment for paralysis*

- An artificial connection between nerve cells in the brain and muscles has been shown to restore voluntary movement to paralyzed limbs
- Monkeys learned to use direct, artificial stimulation from arbitrarily chosen motor cortex cells, to play a video game
- Muscles were directly stimulated using the activity of neurons in the motor cortex



The Institute of Translational Health Sciences

Washington National Primate Research Center

# CTSA Translational Projects

## The Scripps Research Institute

Pioneers Wireless Health Care Research  
*Scripps Translational Science Institute has partnered with wireless telecommunications company Qualcomm to launch the world's first physician-scholar training program on wireless health care research*

- The CTSA program served as the catalyst that connected Scripps to Qualcomm and other technology firms
- Scripps sought to create an institute that would draw on the countless wireless technology resources in San Diego and to pioneer wireless health care applications
- Within the CTSA consortium, Scripps is positioned to become an invaluable resource for this emerging, high-impact field of research



# Social Networking: A Tool for Biomedical Researchers

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## Social Networking – Definition

- Social structure made of individuals or organizations that are tied by one or more specific types of interdependency, such as values, visions, ideas, friendship, research interests or trade

## Social Networking – Benefits:

- Establishes meaningful connections between and among individuals
- Previously accomplished by business card exchange and conversations
- Emergence of internet supported by affordable personal computers has expanded social networking into ubiquitous online communities



## Social Networking at Harvard CTSA

Harvard Catalyst is a shared enterprise of Harvard University, its ten schools and its 18 Academic Healthcare Centers, as well as numerous public, private and community partners



- Harvard Catalyst allows researchers to:
  - Find people
  - Continue learning
  - Access resources

# Social Networking at Harvard CTSA

THE HARVARD CLINICAL AND TRANSLATIONAL SCIENCE CENTER

PEOPLE LEARNING RESOURCES

Contact Us News RSS

Search Catalyst

NEWS

feb. 3/09:  
The Harvard Interfaculty Initiative on Medications and Society Presents A Conference on Generic Drugs  
[Full Story](#)

**FIND people**  
Search by keywords for colleagues, collaborators, mentors. Build a trans-Harvard team. Customize your profile to reflect your present interests.

**CONTINUE learning**  
Degree programs, courses, nano-courses, colloquia, seminars. Customize your lifelong education.

**ACCESS resources**  
Apply for pilot funds. Use the human research labs. Access cores and emerging technologies. Gain access to patient information and samples.

# Social Networking at Vanderbilt CTSA

## StarBRITE

StarBRITE: The Biomedical Research Integration, Translation and Education portal

- Provides one stop shopping for research needs:
  - Identifies resources
  - Helps find experts
  - Obtains regulatory support
  - Accesses templates for research preparation and study conduct
  - Obtains database development software
  - Provides institutional application and research approval process support

The screenshot shows the Vanderbilt StarBRITE website. At the top, there is a search bar for VUMC and a navigation menu with links for My Research, Governance Dashboard, My Profile, StarBRITE Home, Research Planning and Implementation, Participant Recruitment, Funding Support, Data Management, Educational Resources, and Quick Links. Below the navigation is a welcome message: "Welcome to StarBRITE: The Biomedical Research Integration, Translation and Education portal." The main content area features several sections: "What is StarBRITE?" which describes the portal's purpose; "Publication News and Statistics" which includes a bar chart titled "Ever wonder which are the most frequently cited Vanderbilt University clinical publications?" showing citation counts for various departments; "New NIH Publication Requirements For All Grantees" with a link to the NIH Public Access Policy; and "Did you know that StarBRITE...?" which lists new tools like the Record Counter and mentions the Clinical and Translational Science Award. There is also a "Ask a question, or make a suggestion" section with a form and a "submit" button.

# National Health Expenditures as a Percent of GDP

