



The Research Enterprise at Virginia Tech

Elizabeth Tranter, Chief of Staff for Research Division

Overview

- An Institutional Perspective on Research
- Mechanisms for Research Expansion
- Brain Research at the Virginia Tech Carilion Research Institute

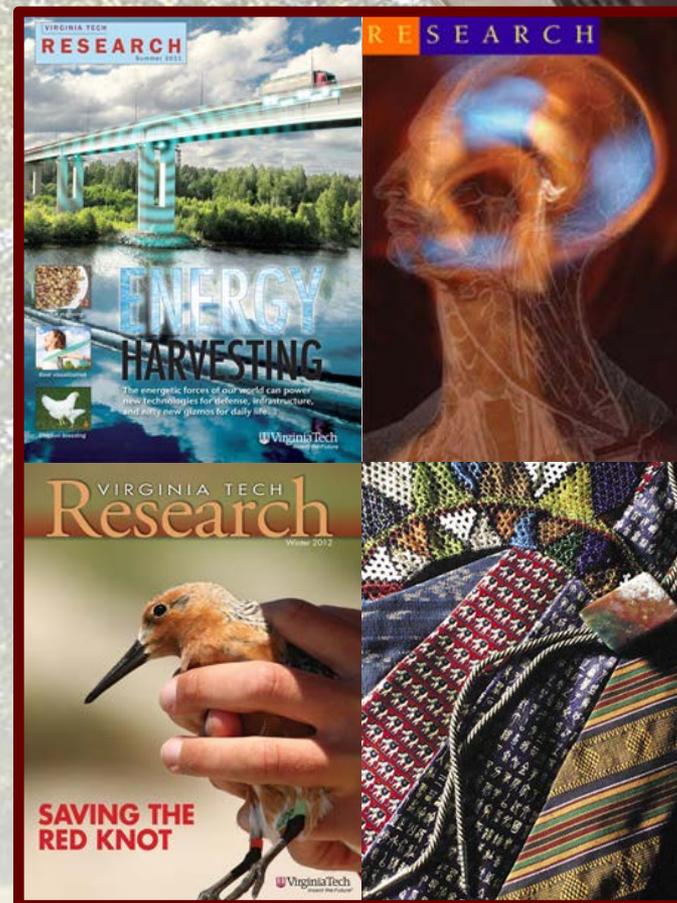
An Institutional Perspective on Research



University Research

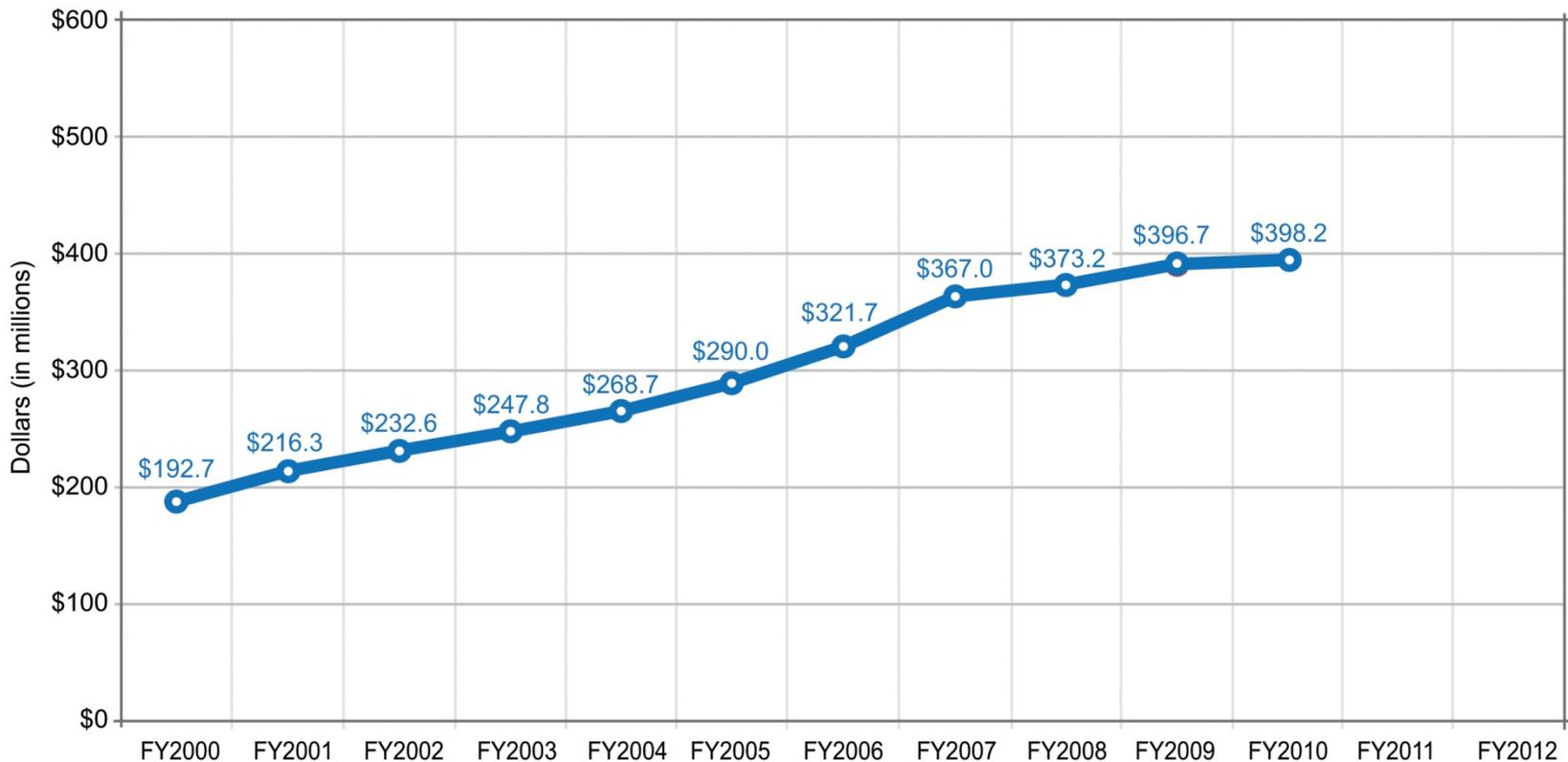
PRIORITY AREAS

- Energy, Materials and Environment
 - Energy
 - Environment and Bioprocessing
 - Materials and Sensors
- Innovative Technologies and Complex Systems
 - Business and Manufacturing
 - Communications, Information Technology, Cybersecurity and Mathematics
 - Transportation
- Health Sciences
 - Biosciences and Biotechnology
 - Food, Nutrition and Health
 - Life Sciences
 - Neuroscience



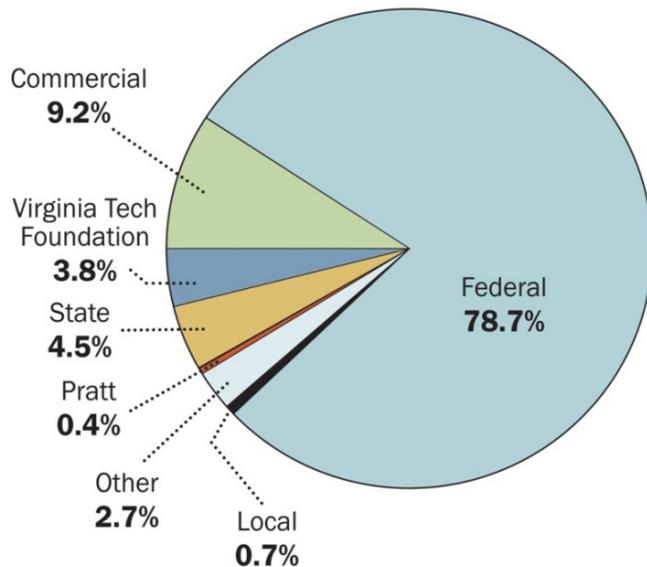
Research Expenditures

Actual NSF-reported expenditures – 2000-2010

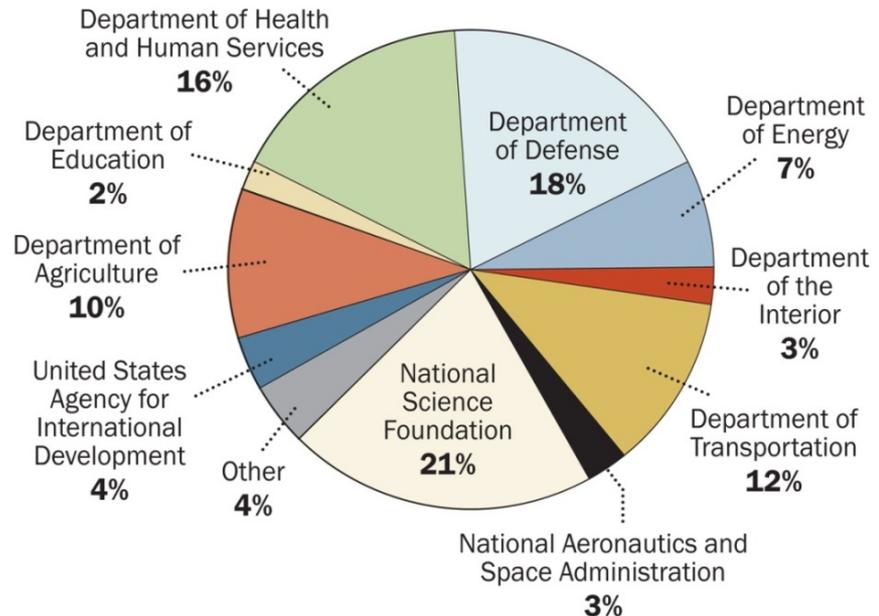


Overview of VT Sponsored Research Portfolio

FY 2011 Sponsored Expenditures from All Sources



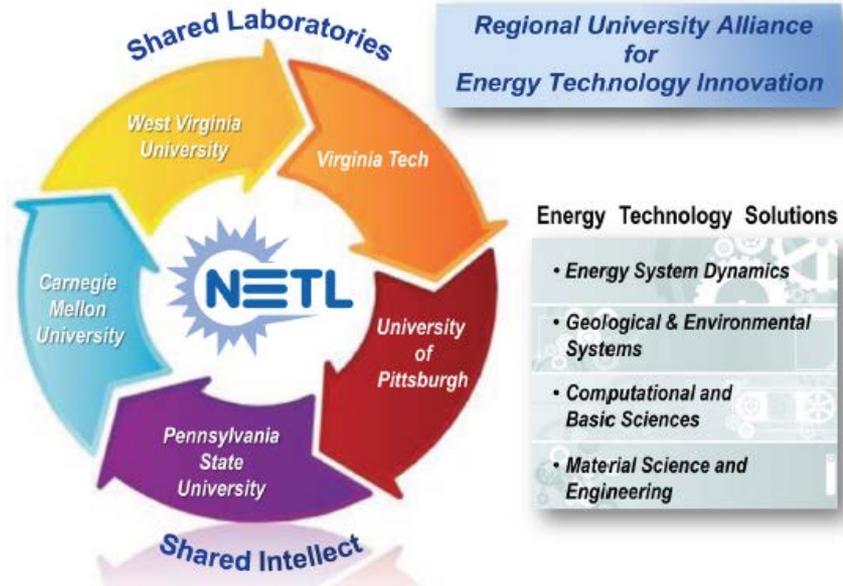
FY 2011 Sponsored Expenditures from Federal Sources



Mechanisms for Research Expansion



Strategic Partnerships



Virginia Life Science Strategy

VT Corporate Research Center



Virginia Tech CRC:

- 140 companies
- Employs 2, 200 people
- 27 buildings
- 956,000 sq. ft. on 120 acres

- Phase II projections
 - 18 buildings
 - 870,00 sq. ft.
 - 3,000 employees
 - ...over the next decade



The Virginia Tech Corporate Research Center is the proud recipient of the 2010 Outstanding Research/Science Park Award given by the Association of University Research Parks (AURP).

The Research Institutes of Virginia Tech

**Virginia
Bioinformatics
Institute**



**Institute for
Critical Technology
and
Applied Science**



**Virginia Tech
Transportation
Institute**



**Virginia Tech
Carilion
Research
Institute**

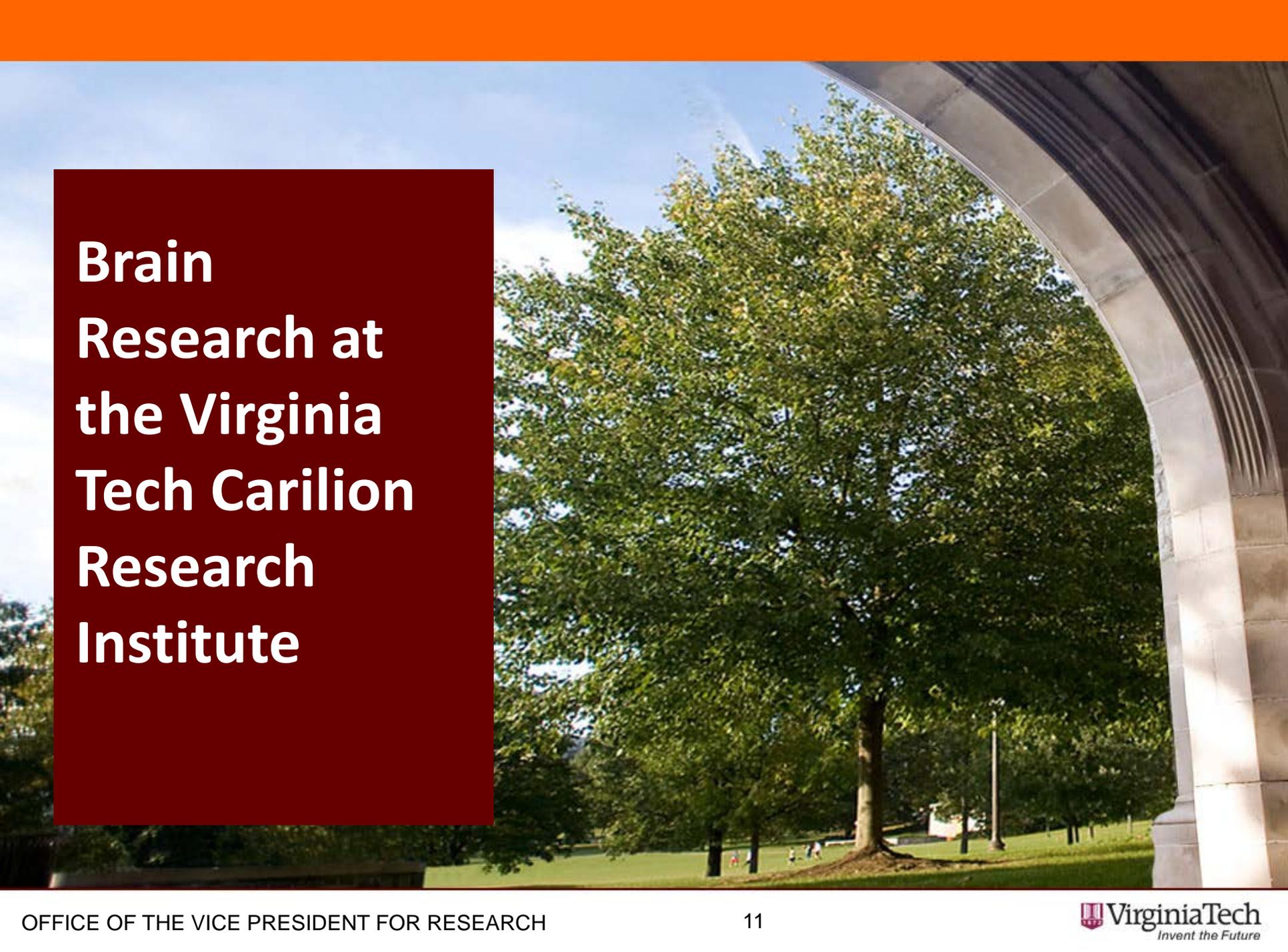


**Institute for
Society,
Culture
and
Environment**



**Fralin
Life Science
Institute**



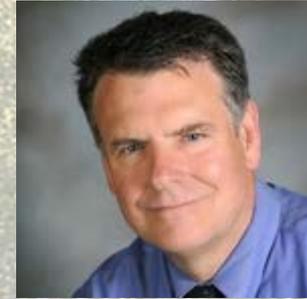


Brain Research at the Virginia Tech Carilion Research Institute

Virginia Tech Carilion Research Institute

VTCRI opened its doors on September 1, 2010, welcoming new faculty, fellows, students and staff from across the U.S. and throughout the world.

The institute provides state-of-the-art facilities for molecular medicine, imaging using lasers, high-power electron beams and magnetic resonance, high-capacity data handling, and human performance analysis.



Michael Friedlander,
Founding Executive Director of VTCRI



Virginia Tech Carilion Research Institute



The first of two MRI machines being
installed at VTCRI.

Progress in the first 18 months

- **16 research team leaders** hired (from Harvard (2), Georgetown, U. Mass. Med School, NIH, Brandeis, Medical University of South Carolina, Baylor College of Medicine, Arizona, Arkansas);
- **131 employees hired** (38 PhD scientists; 93 software engineers, postdoctoral fellows, Ph.D. and undergraduate students, technicians and administrators from 14 states and 11 countries); **annual payroll = \$8.6M; average annual salary per employee = \$65,000;**
- **31 current active research grants** (annual value **\$8.6M**; multi-year portfolio = **\$37.3M**; \$27M pending); 1 biotechnology start up company established in Roanoke; 3 in progress;
- Established collaborative research programs between VTCRI in Roanoke and **Salem Veterans Administration**, U.K., Norway, Korea, China, Germany; Princeton, Cal Tech, Emory, Duke, Wake Forest, CNMC, UCLA;
- Launched **world's largest brain study** based in Roanoke.

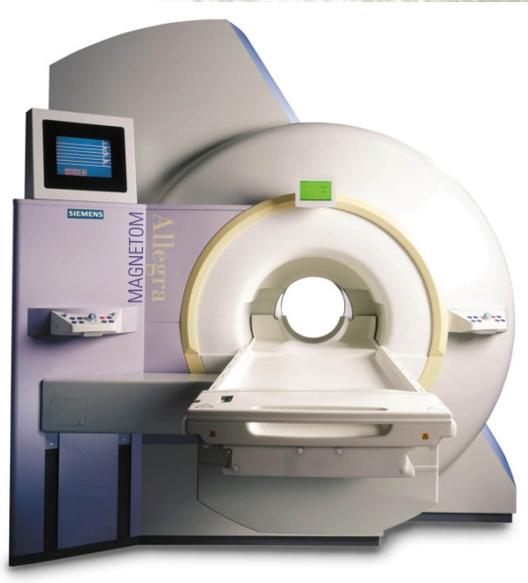
Functional magnetic resonance imaging (fMRI) group at VTCRI



Brooks King-Casas, Ph.D.
Social cognition in PTSD/
TBI in veterans



Stephen LaConte, Ph.D.
Inventor of real time
fMRI feedback for developing
new treatments
for stroke, TBI



Makes a 'movie' of microscopic
blood flow changes in the brain



Pearl Chiu, Ph.D.
NIH BRAINS Award –
PTSD/depression/substance
abuse innovator



Read Montague, Ph.D.
Inventor of hyperscanning; field
of computational psychiatry;
brain as a sensor of pathology

Thank you

Elizabeth Tranter
Chief of Staff
Research Division
Virginia Tech
Tel: 540-231-1782
E-mail: etranter@vt.edu