

## **Committee Minutes**

### **Committee on Research**

**Duck Pond Room  
Inn at Virginia Tech and Skelton Conference Center  
4:30-5:30 p.m.**

**March 20, 2016**

#### **Committee Members Present:**

Mr. Dennis H. Treacy  
Dr. Nancy Dye  
Mr. B. K. Fulton  
Mr. Mehmood Kazmi

#### **Guests:**

Dr. Timothy Sands, Dr. Thanassis Rikakis, Mr. Dwight Shelton Jr., Dr. Theresa Mayer, Mr. James L. Chapman, Dr. Mr. William D. Fairchild III, Mr. Charles T. Hill, Mr. Michael J. Quillen, Ms. Deborah Petrino, Rev. Wayne H. Robinson, Mr. Mehul Sanghani, Mr. Stephen Sturgis, Mr. Horatio Valerias, Mr. Robert R. Broyden, Ms. D'Elia Chandler, Mr. Rami Dalloul, Mr. Martin Daniel, Dr. Karen DePauw, Dr. Sam Easterling, Dr. Srinath Ekkad, Dr. Jack Finney, Ms. Natalie Hart, Ms. Kay Heidbreder, Ms. Elizabeth Hooper, Ms. Sharon Kurek, Dr. Scott Midkiff, Mr. Mark Owczarski, Mr. John Pastor, Mr. Charles Phlegar, Ms. Kim O'Rourke, Dr. Patricia A. Perillo, Charles Phlegar, Dr. Ellen Plummer, Mr. J. Scot Ransbottom, Dr. Sanjay Raman, Mr. Mohammed Seyam, Ms. Savita Sharma, Ms. Morgan Sykes, Ms. Tracy Vosburgh, Dr. Sherwood Wilson, Mr. Chris Yianilos, and Ms. Beth Tranter.

- 1. Opening Remarks and Approval of August 30, 2015 Minutes.** Mr. Treacy called the meeting to order and welcomed those in attendance. He introduced Dr. Theresa Mayer as the new Vice President for Research and Innovation. The minutes were unanimously approved. Mr. Treacy conveyed the appreciation of the Board to Dr. Dennis Dean for his service as Interim Vice President for Research during the past year.
- 2. Remarks from the President.** President Sands welcomed those in attendance and provided an overview of the General Assembly's recent bond approval, which includes the university's request for \$46.7 million of state funding, to be matched by \$21 million from Virginia Tech and Carilion Clinic, to construct a 105,000 square-foot facility to expand health sciences and technology research and training assets in Roanoke. The General Assembly also approved the development of a Higher Education Research Initiative, which provides a pool of \$8 million in the first year and \$14 million in the second year for Virginia institutions to attract high-performing

researchers. A second pool of funding will be available for lab renovations and enhancements as well as new equipment. The funding is competitive and will require an institutional match. President Sands also reviewed a study of several state-based models (including the Georgia Research Alliance) that focus on research growth through enhancing partnerships across sectors, with the goal of building such a program for the Commonwealth of Virginia. President Sands then discussed a proposal by Innova to create a partnership and shared genomics site in the area of personalized medicine with George Mason University, the University of Virginia Tech, Virginia Commonwealth University and Virginia Tech as partners. This is an example of the type of partnership that will be fostered through Commonwealth investment funds.

3. **Resolution for Exclusion of Certain Officers/Directors:** Mr. Treacy provided an overview of the Resolution for Exclusion of Certain/Officers/Directors. The resolution was unanimously approved by the committee.
4. **Overview from the Vice President for Research and Innovation:** Dr. Mayer thanked Dr. Dennis Dean for his service as interim Vice President for Research during the last year, and his assistance during the transition. Dr. Mayer provided an overview of her academic and research background, having received her bachelor's degree from Virginia Tech and her Master's and Ph.D. in electrical engineering from Purdue University. She comes to Virginia Tech from Penn State University, where she served for 20 years as a faculty member and most recently as Associate Dean for Research and Innovation. Dr. Mayer was named a Distinguished Professor in electrical engineering and materials science and engineering. At Penn State, Dr. Mayer also served as the faculty director of the Penn State Nanofabrication Laboratory in the Materials Research Institute, and as the site director of the National Science Foundation-supported National Nanotechnology Infrastructure Network. Dr. Mayer also provided an overview of her research in nanomaterials and nanodevices. Dr. Mayer then discussed opportunities for the research enterprise at Virginia Tech, including the evolution of the land-grant university mission, developing holistic university-industry partnerships, enhancing technology transfer, fostering development of large-scale research efforts and supporting further diversification of the research portfolio. She also discussed the development of comprehensive metrics by which to determine the impact of research initiatives.
5. **Flint, Michigan Water Study:** Due to time constraints, Dr. Marc Edwards' presentation was postponed until a later date.

#### **Adjournment.**

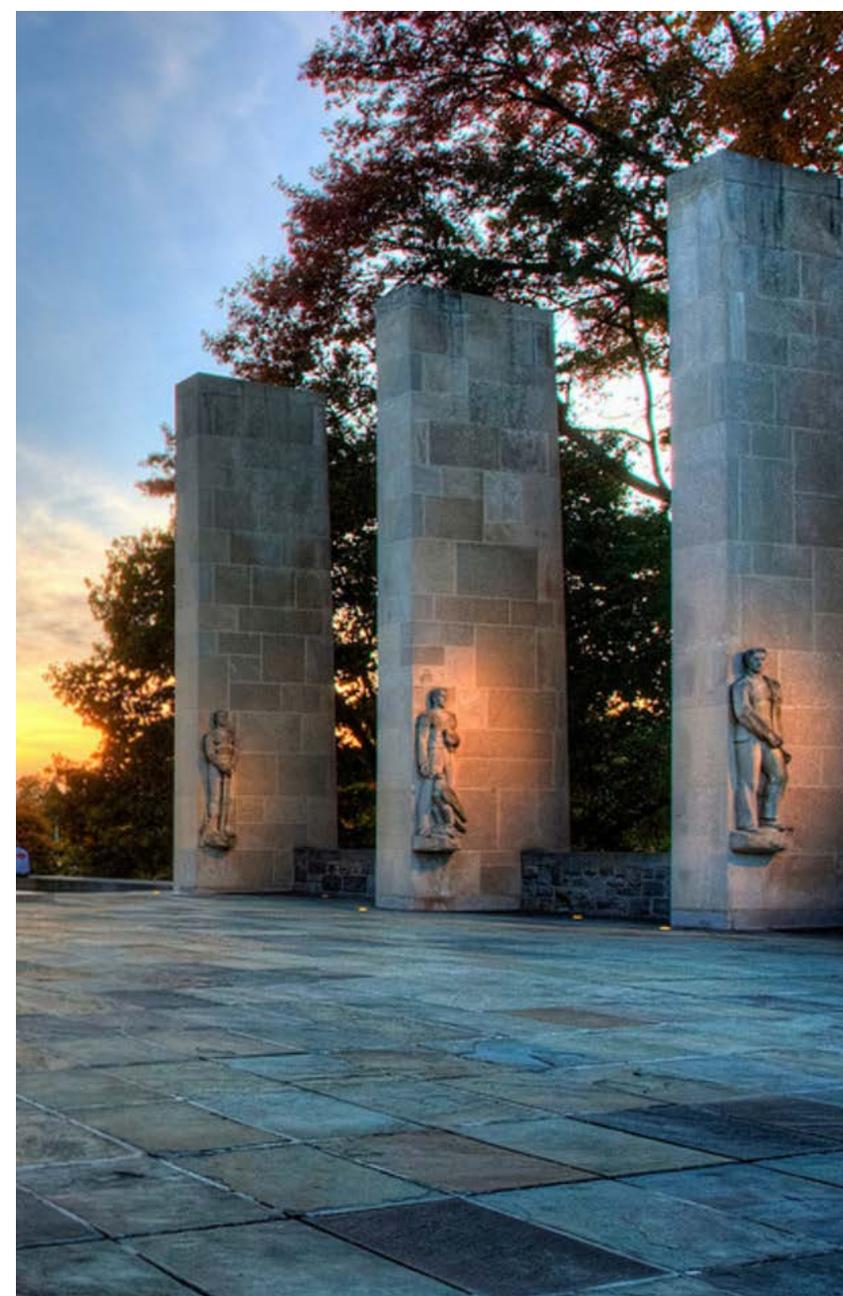
There being no further business, the meeting adjourned at 5:40 p.m.

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Theresa Mayer  
Vice President for Research  
and Innovation

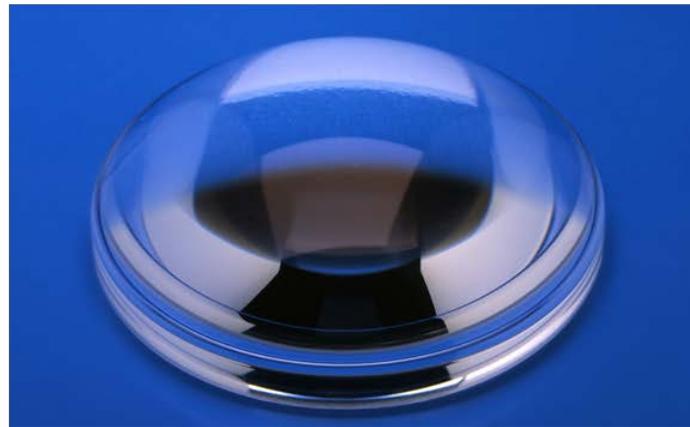
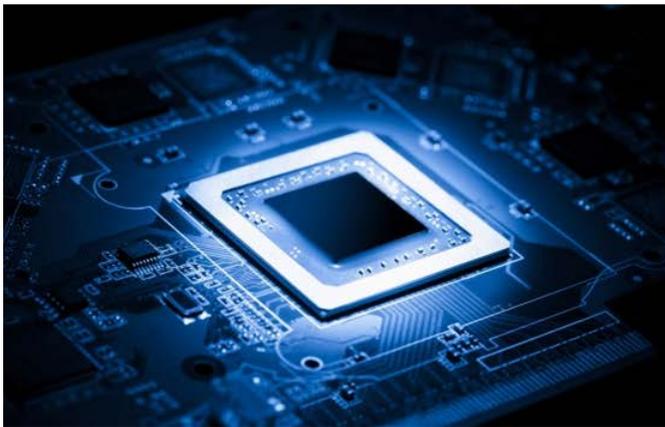
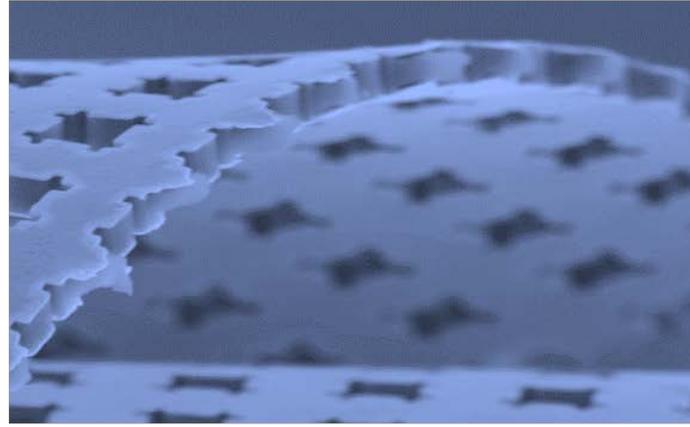
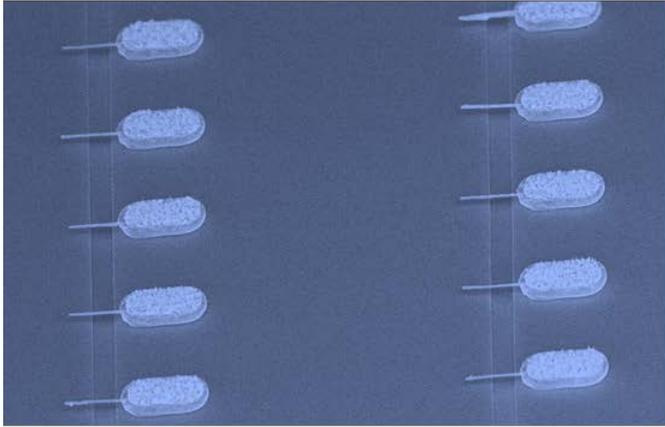
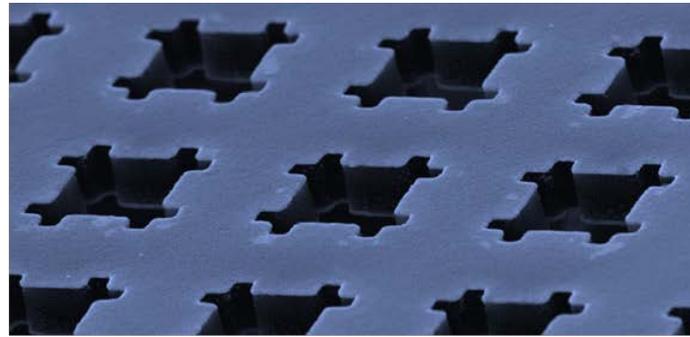
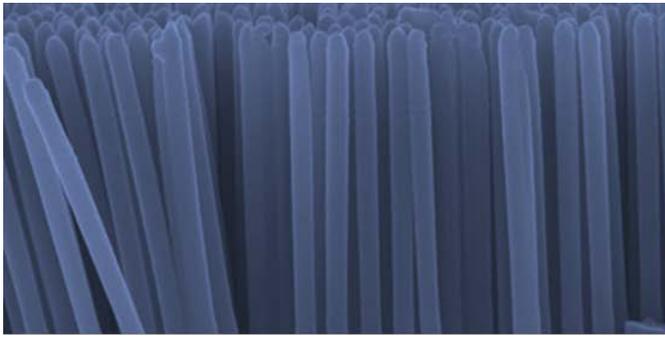
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Virginia Tech, Purdue, Penn State

nanoelectronics



nanophotonics

Center for Nanoscale Science  
MRSEC  Materials Research Science & Engineering Centers

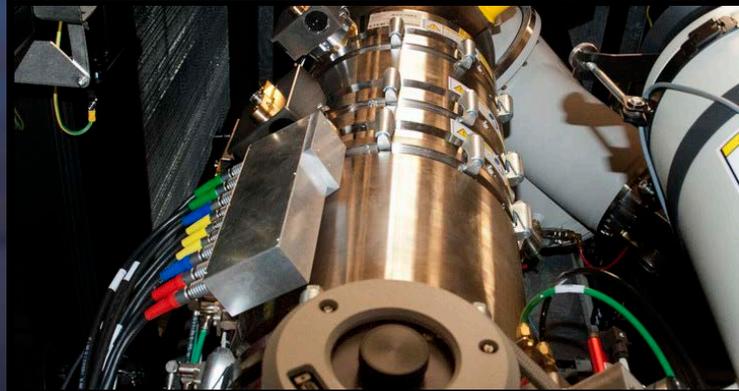
 SSIST  
NSF Engineering Research Center

 LEAST  
LOW ENERGY SYSTEMS TECHNOLOGY

 MIND

Industry-DoD Funded Centers

NSF, NIH, DOE, DOD, industry, university-industry-DOD



NSF National Nanotechnology Infrastructure Network Site



Rural-to-Urban



Associate Dean for Research & Innovation,  
College of Engineering

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# Priorities

## Research and Innovation

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# Premier contemporary land-grant university

1872: Focus on practical agriculture, science and engineering – without excluding classical studies – as a response to the industrial revolution and changing social class

Post-2014

1994 to 2014 Strategic investments in faculty and institutes to grow research enterprise  
Research expenditures: \$513M

Pre-1994 Largest investments to support undergraduate mission  
Research expenditures: \$125M

# Premier contemporary land-grant university

Today: Transition from agricultural and manufacturing economy to knowledge-based global economy

Post-2014

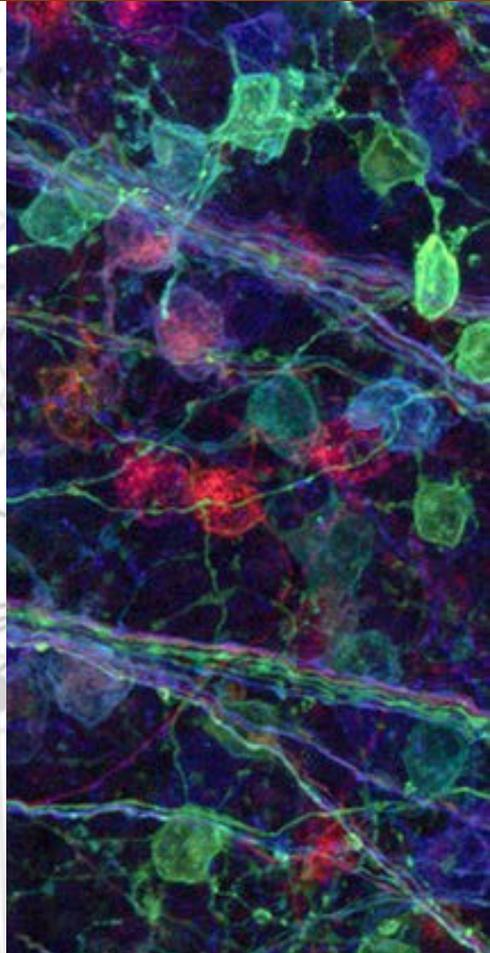
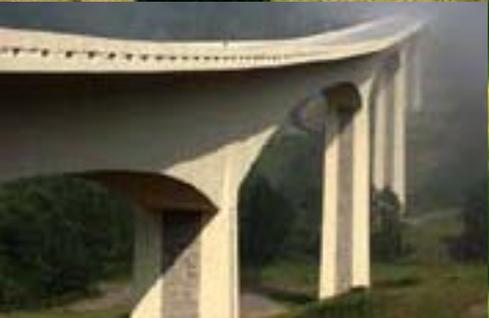
1994  
to  
2014

Global 'Go-To' destination in transdisciplinary research and innovation areas aligned with VT vision and mission

Metrics: expenditures, scholarly works, student success, commercialization, engagement, others

Pre-1994

# Research Strengths



Ut Prosim - "that I may serve"

# Geographically Distributed Campus



Ut Prosim - "that I may serve"

# Priorities

- Develop high impact, center-level programs
- Expand metrics to foster and reward excellence across disciplines
- Support state-of-the-art infrastructure and accreditations
- Streamline research administration
- Foster holistic university-industry partnerships
- Translate research discoveries into commercial products

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# Innovation and Entrepreneurship Ecosystem

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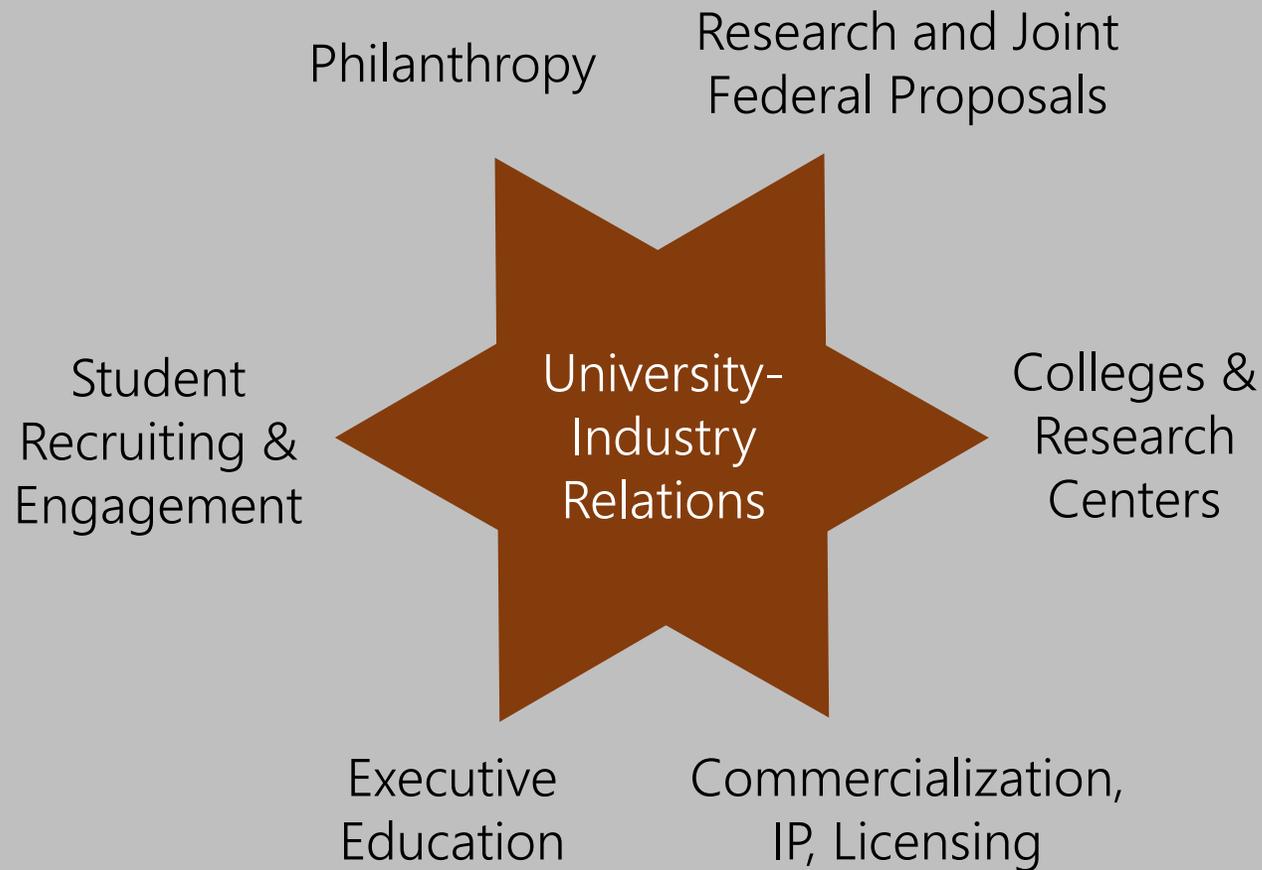
“The universities that figure out industry-university (and government) relations are the ones that will excel in the next ten years”

Industry becomes an investor

Holistic partnerships with low barriers

Adds value for both partners

# Corporate Relationship Nexus



## Strategic Partners

- Mutual benefits
- One-stop shopping
- Campus coordination
- Integrated research development
- Institutional support



# Translating research discoveries into commercial products and services is a driver for economic development

Over \$500 million in research expenditures

Top 100 in IP generated

Ambitious and smart people

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# Research Highlight

## Marc Edwards

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