

Committee Meeting Minutes
RESEARCH COMMITTEE
Torgersen Hall Board Room 2100

April 2, 2017

Committee Members Present

Mehmood Kazmi (chair), Steve Sturgis, Horacio Valeiras

Guests

Monty Abbas, D'Elia Chandler, Jim Chapman, Gabe Cohen, Sheila Collins, Al Cooper, Joe Crane, Karen DePauw, Tom Dingus, Jack Finney, Lance Franklin, Ron Fricker, Mike Friedlander, Greta Harris, Kay Heidbreder, C.T. Hill, Tim Hodge, Theresa Mayer, Scott Midkiff, Sally Morton, Michael Moyer, Seyi Olusina, Kim O'Rourke, Mark Owczarski, Alex Parrish, Patty Perillo, Chris Peterson, Debbie Petrine, Charles Phlegar, Mike Quillen, Chris Rahmes, Tara Reel, Thanassis Rikakis, Wayne Robinson, Tom Ryan, Timothy D. Sands, Mehul Sanghani, Savita Sharma, Dwight Shelton, Dennis Treacy, Tracy Vosburgh, Chris Yianilos

1. **Welcome.** Mehmood Kazmi, chair of the committee, called the meeting to order and welcomed those in attendance. In the interest of time, the committee voted unanimously to move directly to consideration of resolutions and the approval of minutes.
2. **Approval of Minutes.** A motion passed unanimously to approve the minutes of the committee's November 6, 2016 meeting.
3. **President's Update.** In the interest of time, President Sands yielded his time, and will include the information he planned to share in his update at Monday's meeting.
4. **Vice President's Update.** In the interest of time, Theresa Mayer, vice president for research and innovation yielded her time, and instead provided a handout to the board covering some of the information she had planned to share in her update.
5. **Resolution for Approval of Appointments to the Virginia Coal and Energy Research and Development Advisory Board.** The committee considered and voted unanimously to approve the resolution.
6. **Resolution for Exclusion of Certain University Officers/Directors in Accordance with the National Industry Security Program.** The committee considered and voted unanimously to approve the resolution.

- 7. Update on the Virginia Tech Business Engagement Center.** Michael Moyer, associate vice president of development for colleges, presented the plan for the center. The Business Engagement Center will enable Virginia Tech to build mutually beneficial and comprehensive relationships with our most valued industry partners. The center will serve as a focal point to integrate multiple initiatives and efforts across campus that include research and joint programs, commercialization, philanthropy and sponsorship, student recruitment and executive education. Over the last nine months, Virginia Tech has signed master strategic alliance agreements with five major corporations, including with Lockheed Martin and Facebook. Tom Dingus, director of the Virginia Tech Transportation Institute (VTTI) and president of VTT LC, provided an overview of VTTI and how it will benefit from the relationships built through the Business Engagement Center.
- 8. Adjournment**
There being no further business, the committee adjourned at 2:41pm.

Industry-University Engagement

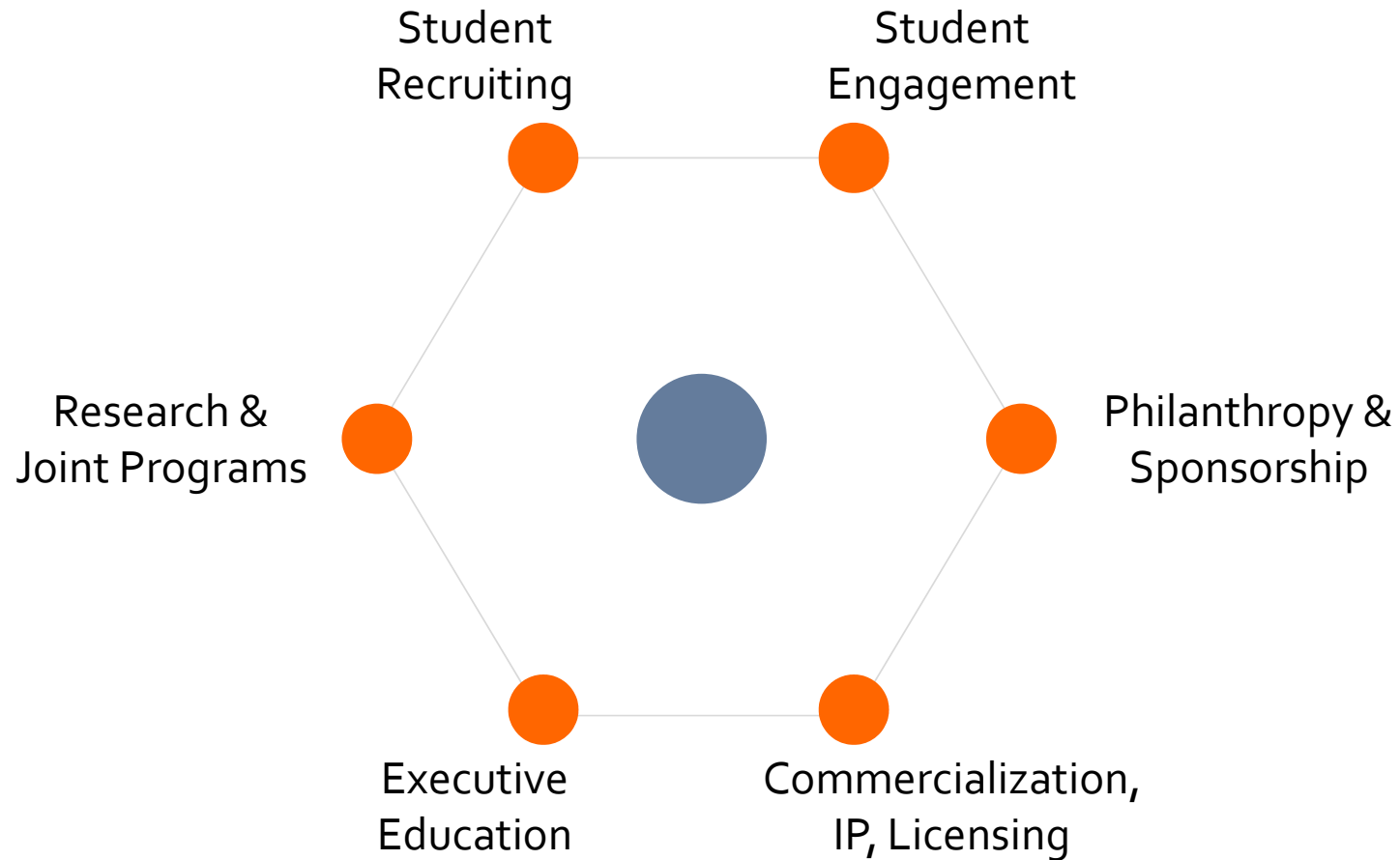
Industry-University Engagement

Companies are changing their strategy:

Current: time and money spread across many partners (100+)

Future: focused strategic alliance partners (up to 20)

University-Industry Interactions



Many Ways to Enter



through the Faculty

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 VirginiaTech | College of Engineering

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Virginia Tech solidifies collaborative research agreement with Lockheed Martin

through **Advancement**

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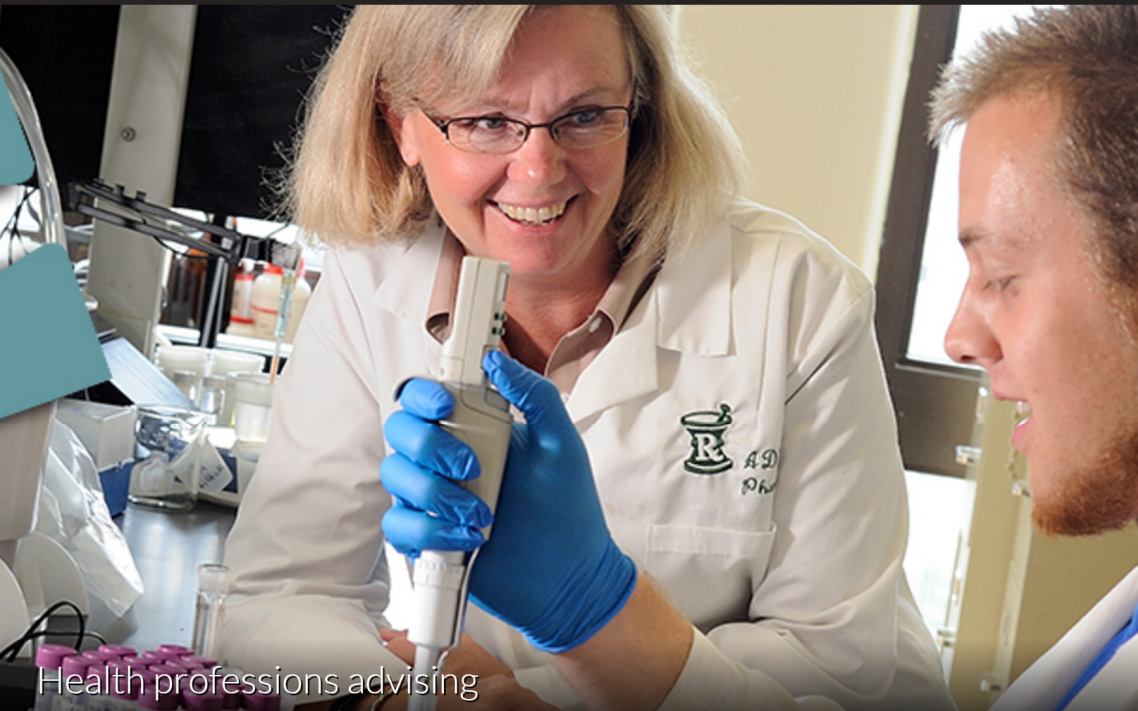
DSA Departments

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ADVANCING INNOVATION

In 1984, the Virginia Tech Foundation acquired property adjacent to the university to create and operate a research park that would enhance the technology transfer of the university and attract additional research to the university and the region. Since then, the 230-acre research park has become home to more than 160 research, technology and support companies and employs over 2,700 in our region.

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Philosophy

Guiding principles that inform and shape foundation decision making.

Portfolio

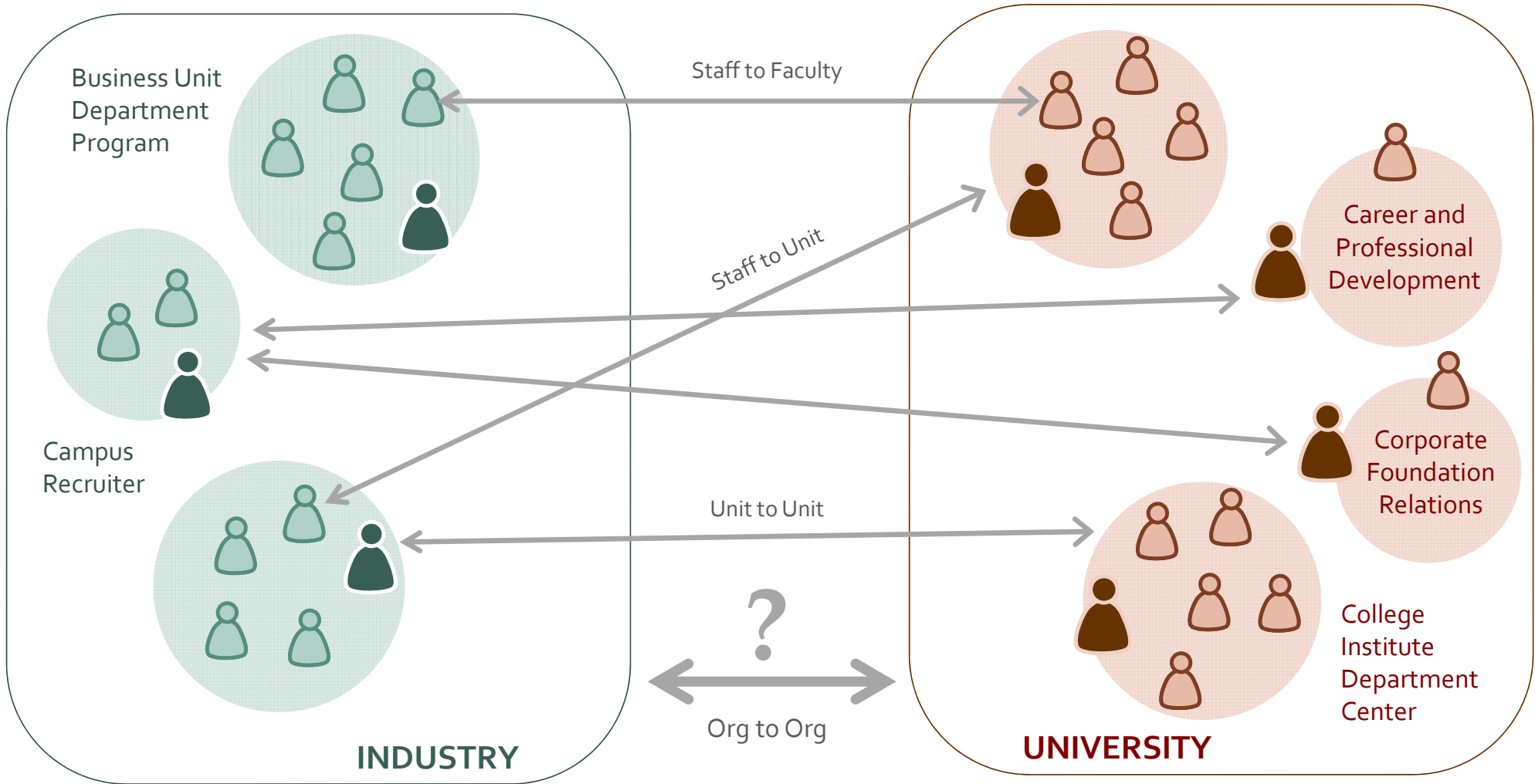
Investment portfolio including real estate holdings and endowments.

Performance

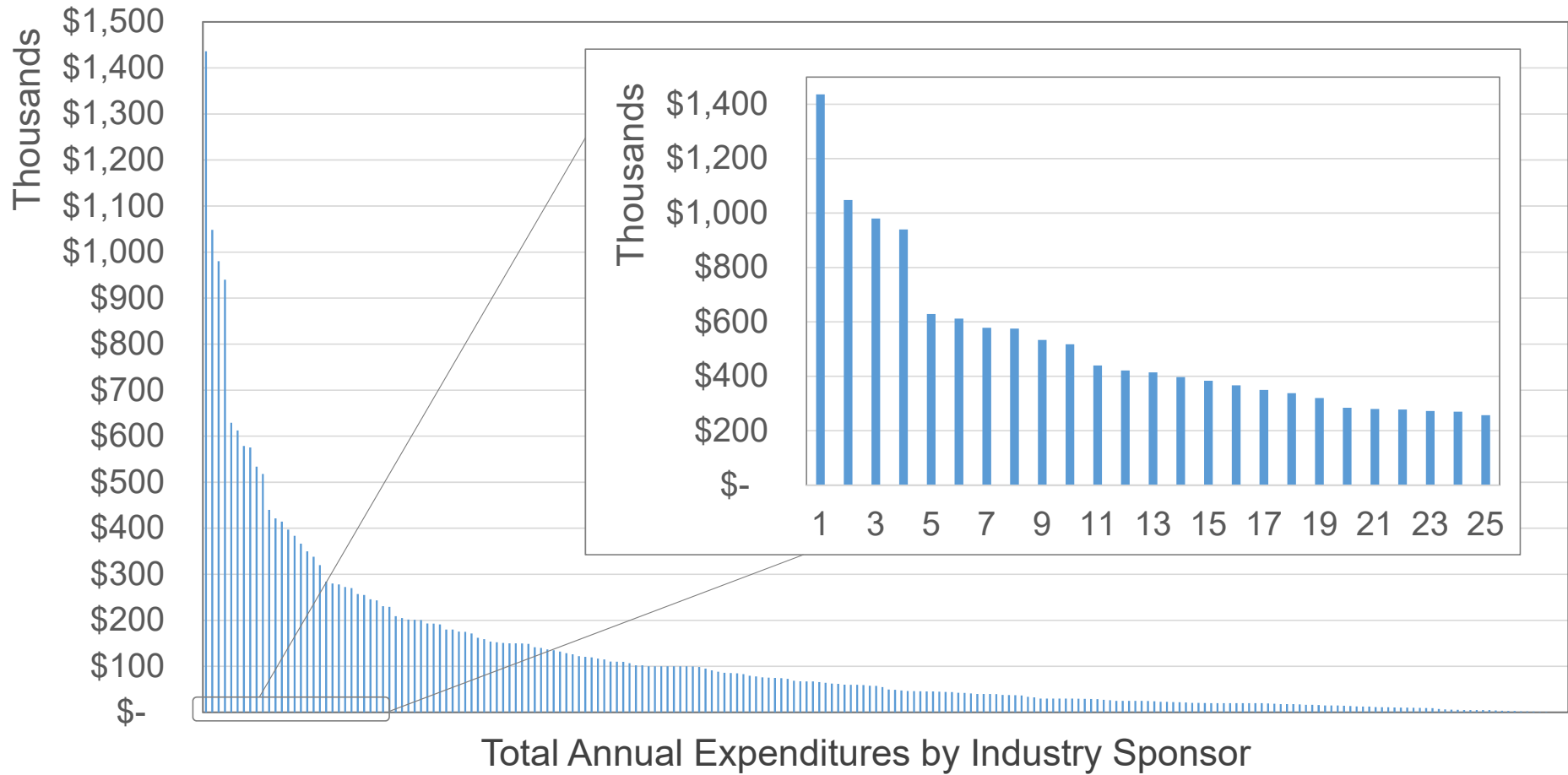
Performance of investments held by the foundation.

through the **Foundation**

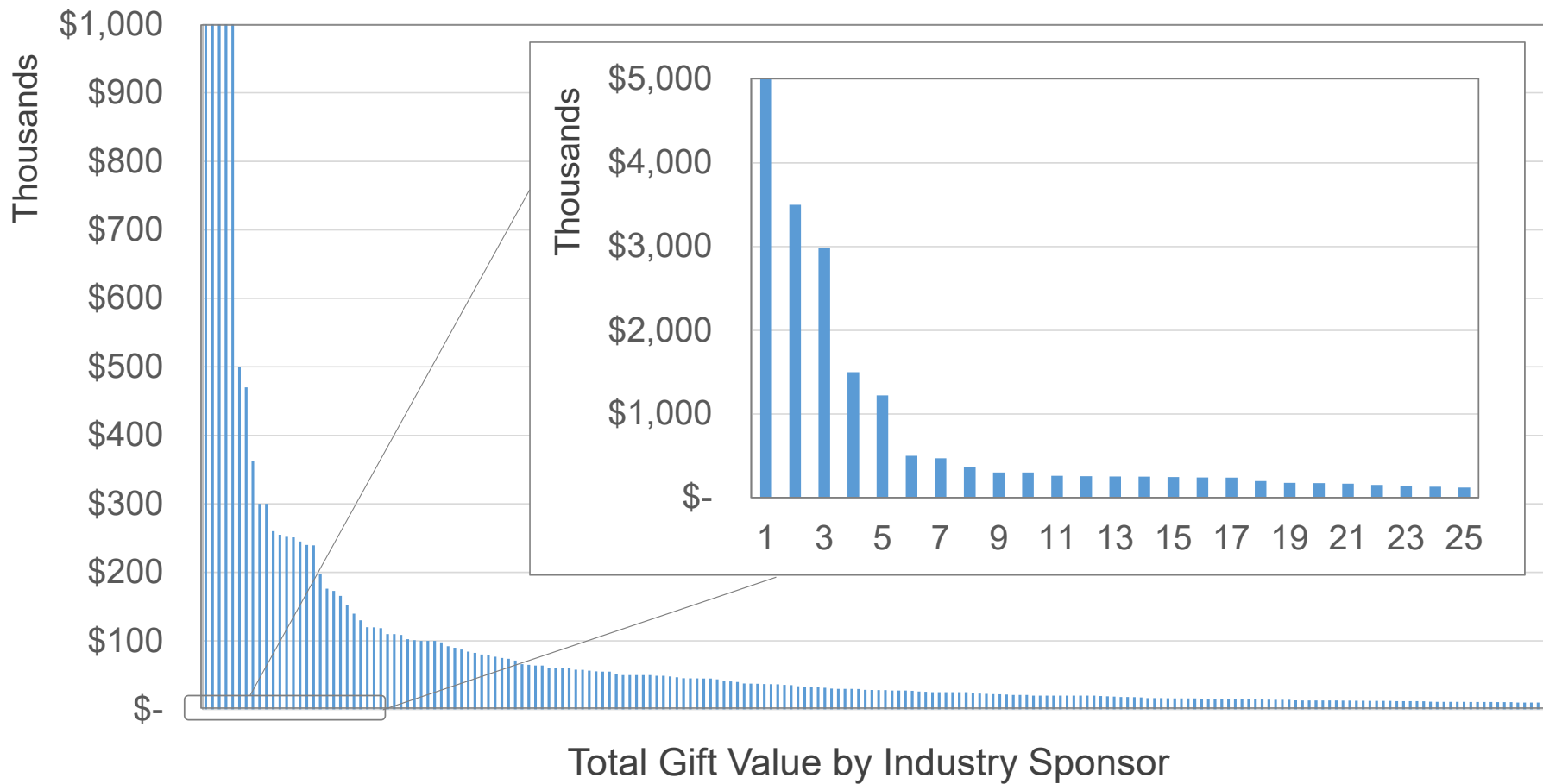
Barriers to Strategic RESEARCH Partnerships with Industry



Industry-Funded Research at Virginia Tech



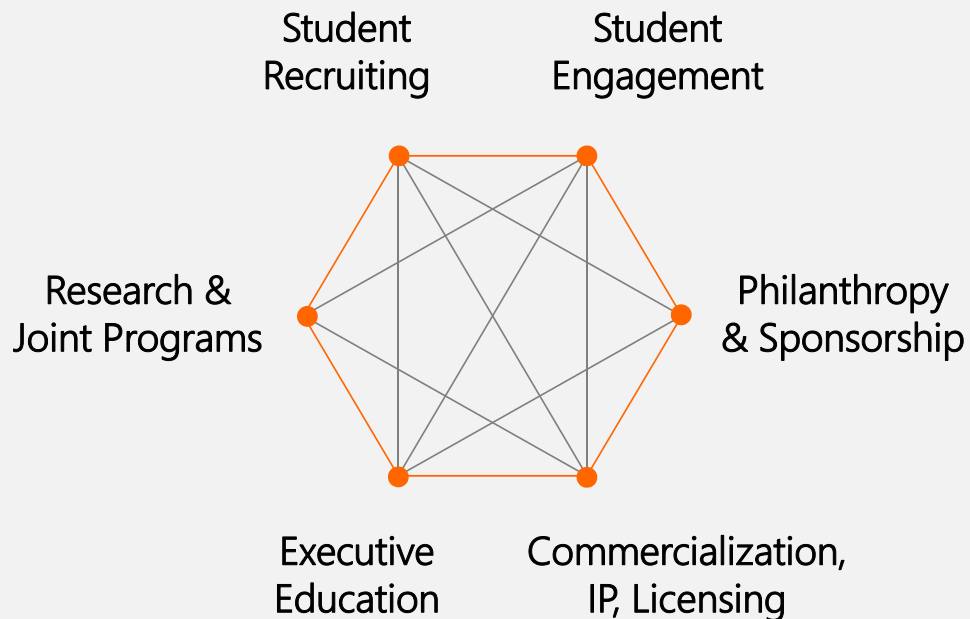
Industry Gifts at Virginia Tech



Virginia Tech's Business Engagement Center

building mutually beneficial and comprehensive relationships
with our most important customers and partners

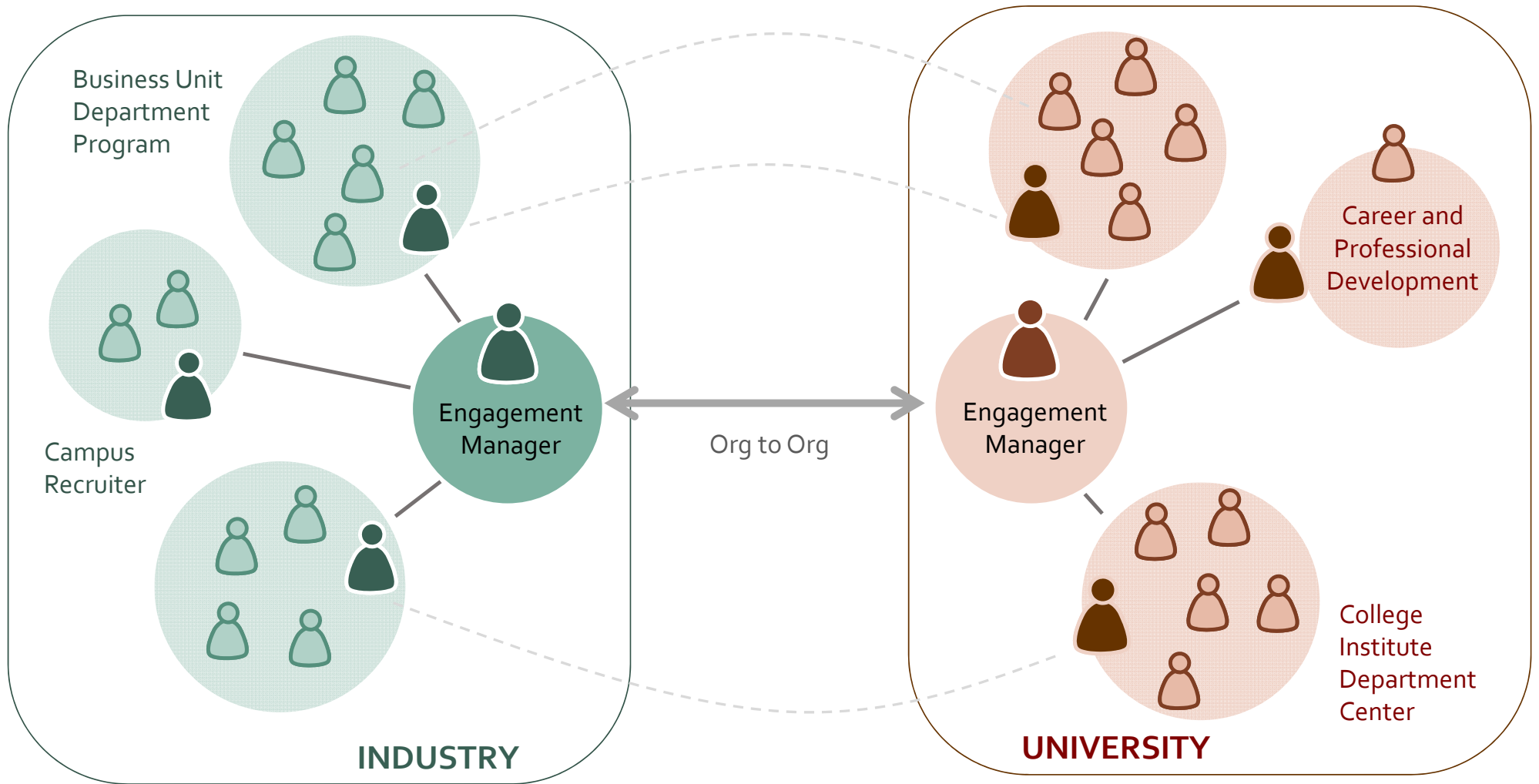
Strategic University-Industry Partnerships



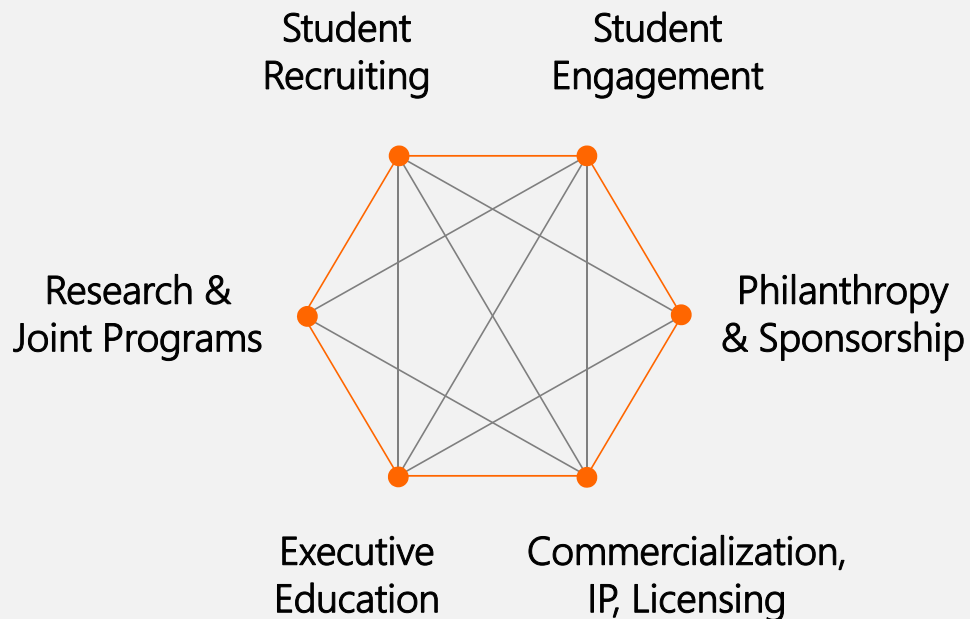
Strategic Business Engagement

- Identifying alignment between needs and expertise
- Connecting talent across both organizations
- Catalyzing innovation through collaboration

Supporting STRATEGIC INSTITUTIONAL Partnerships with Industry



Strategic University-Industry Partnerships



Master Alliance Agreements

- Rolls Royce
- Proctor and Gamble
- Lockheed Martin
- Facebook
- Ford
- UTC and UTC Aerospace

Industry Engagement Example

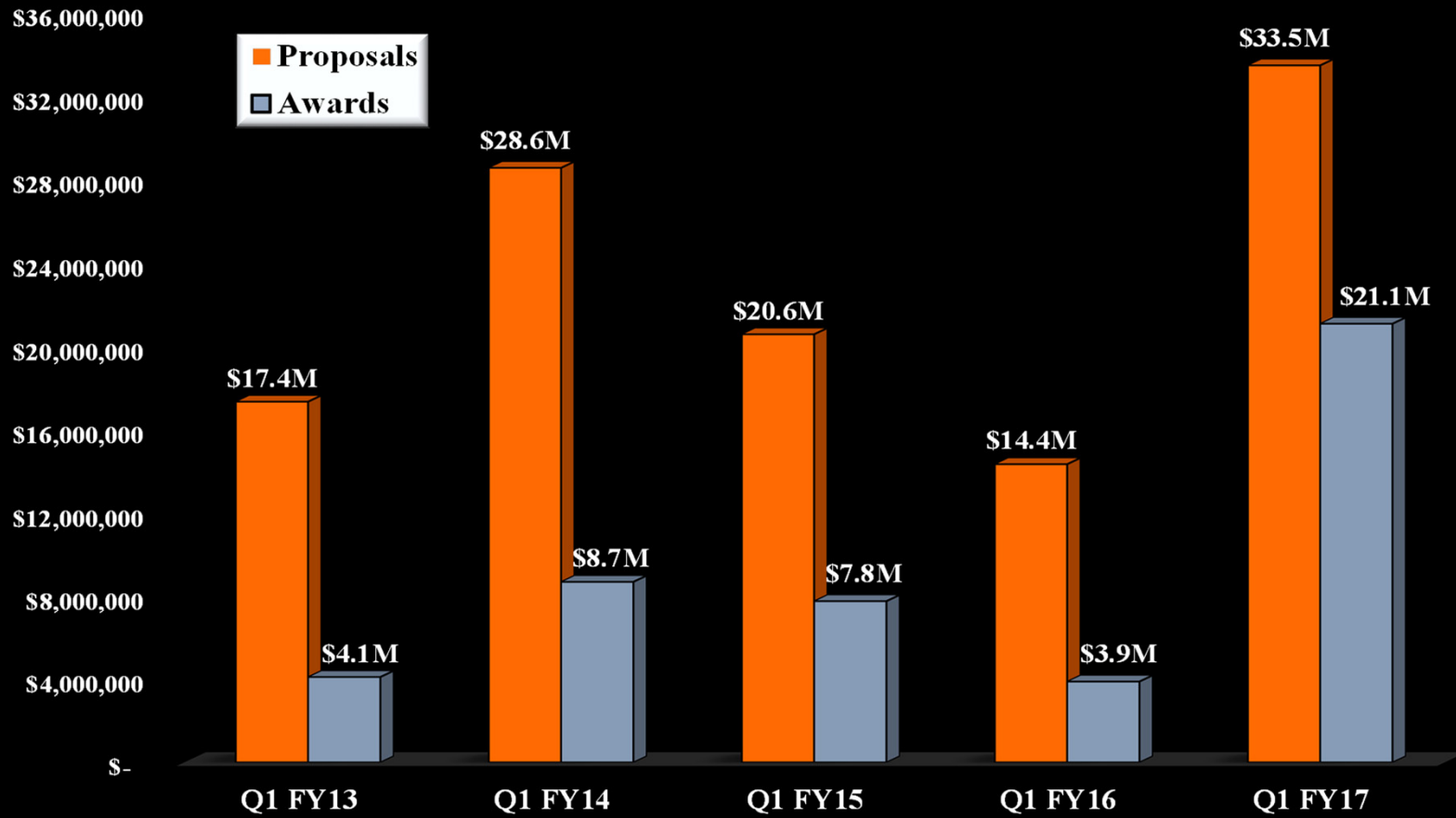
Virginia Tech Transportation Institute

Tom Dingus, Director and President of VTT LLC

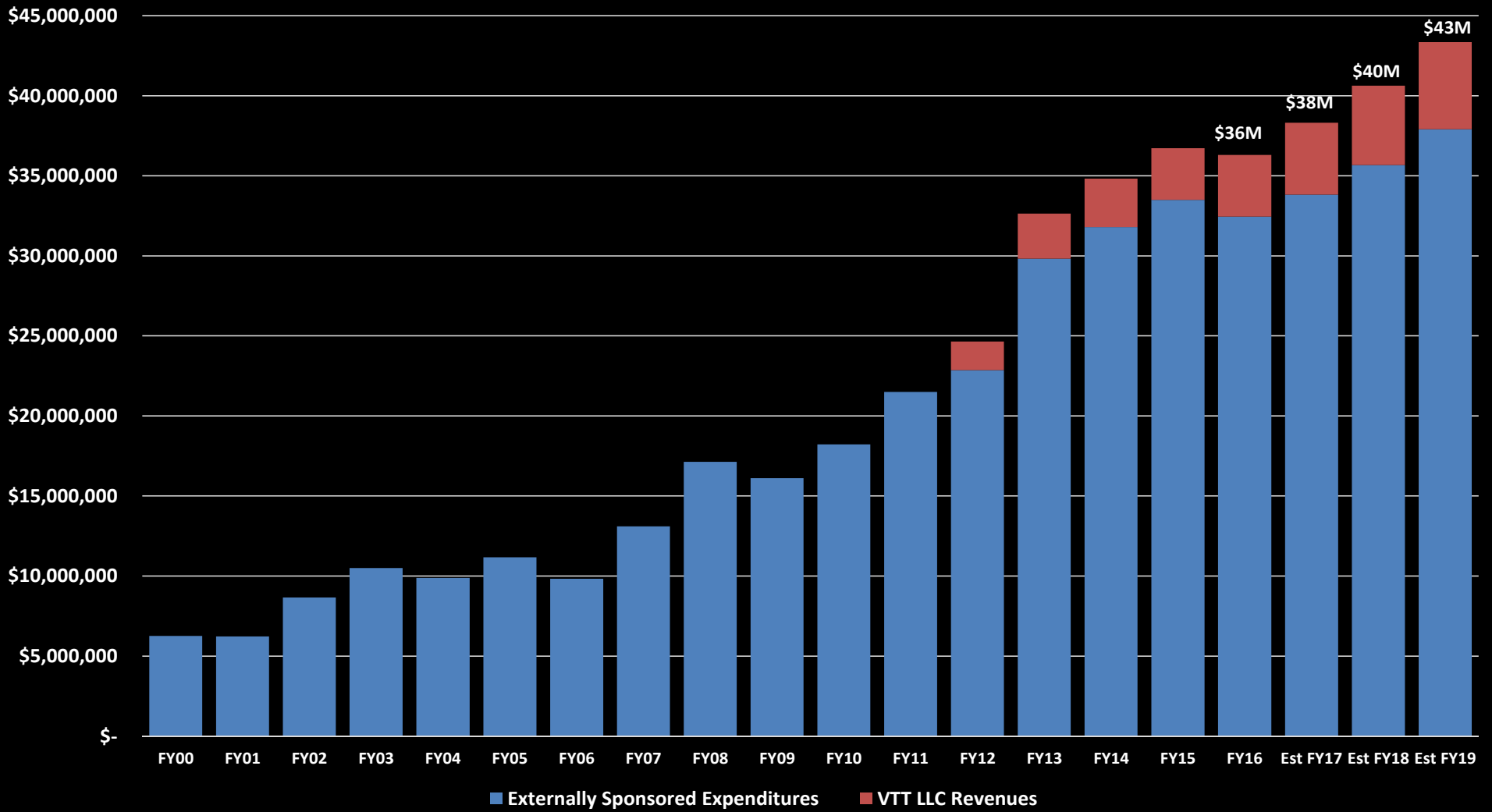
Evolving to Keep Pace in Disruptive Space

- 300+ active projects across ~100 sponsors
 - > 60 new sponsors/customers since FY15
 - 14 automotive manufacturers and > 40 suppliers
- Contract vehicles with all major federal sponsors: FHWA, FMCSA, NHTSA, NAS
- Lead recent Ford Alliance with Virginia Tech
- 250+ proposals/year with a win rate of over 60%

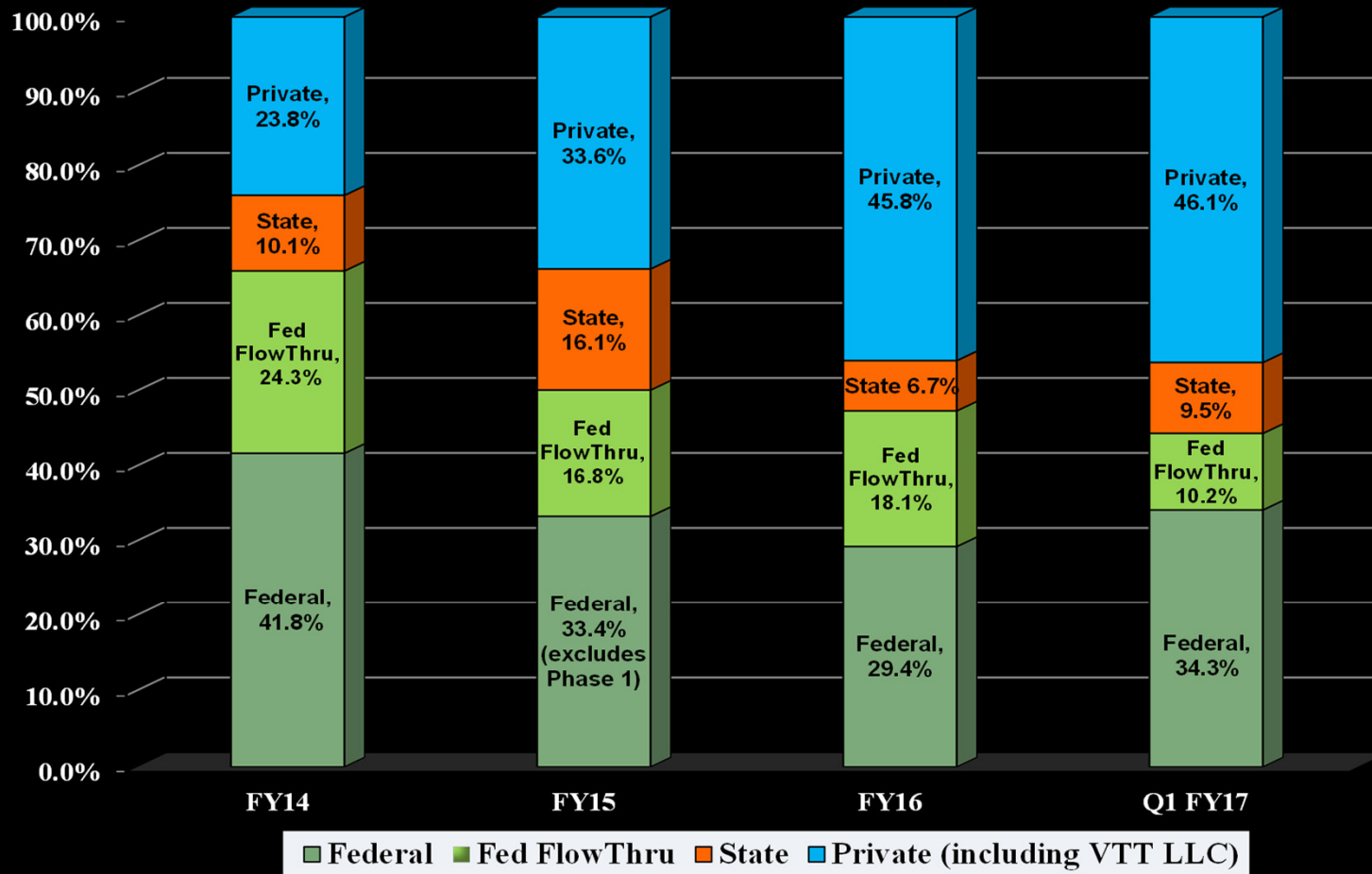
First Quarter Proposal and Award Activity



Externally Sponsored Expenditures Over Time



Percentage of Industry Funding is Increasing



During the next five years, automakers and suppliers will spend **\$20 billion** globally on automated-vehicle development

VTTI is in a fierce competition with Michigan, California, Texas, Ohio and others for the resulting research and economic development





photo by Rick Griffiths

The pace of this development is being driven by private industry more than ever before

Federal Government role is evolving into one of a partner, sponsoring some research and standards and guideline development

Total investment ~\$200M/year

To grow or even keep pace, VTTI must migrate to more private sector funding

Smart Road Expansion Projects

Evolution Strategy #1

The world's premier facility for automated vehicle testing focused on "edges and corners"



Surface Street Expansion: VDOT, VTTI, VT



Phase 1. Virginia Automation Park (October 2017)

- Full range of roadways/driving environments (surface streets, two-lane, multi-lane flat)
- Residential/suburban layout
 - “Portable” reconfigurable buildings and other infrastructure elements
 - Example: Facades attached to semi trailers and shipping containers
- Connectivity to the Smart Road
 - Highway layout
 - Signalized intersection
 - Weather and lighting generation

Phase 2. Intern Village (2018, self-funded)

- Company-funded internships for students Company interest in having “hands-on” experience during senior year and/or first-year master’s
- Goal of 10 companies funding \$100k-200k/year
- Building will be self-funded, CRC, 15,000 sq. ft.

Rural Roadway Expansion: Target 2018



- Challenging, but realistic, rural roadway
- Design completed in consultation with current and future potential partners and other stakeholders:
 - GM, Ford, Nissan, Volkswagen, Google, Commonwealth Transportation Board members, VDOT, VTRC
- Rural testing capabilities:
 - Hilly and flat winding roads
 - Interfering terrain and natural foliage
 - Small bridges and narrow sections
 - Off-road testing
 - Rural intersections
 - Roadways will be built to older (e.g., 1965) standards

