



September 21, 2020 1:30-3 PM EDT

Moderator, Priya Baboo, Penn State Paul Jensen, Drexel Anna Koulas, Drexel













Brad Fravel, Virginia Tech Russ Kilman, SEI Melissa Erekson, Penn State Michael Ruger, Comcast





Drexel University: The Drexel Solutions Institute UIDP Virtual Conference: Strategic Considerations for the Transition to a Centralized Corporate Engagement Model September 21, 2020







Paul Jensen Provost, Drexel University

THE

Russ Kliman Global Leader, SEI Ventures

Anna Koulas Vice President,

Drexel Solutions Institute

About Drexel University

- Located in the heart of Philadelphia, Drexel University is a comprehensive global research university and a leader in experiential learning for over 100 years.
- With over 24,000 students, Drexel is one of America's 15 largest private universities
- Drexel has a history of academic technology firsts
- Carnegie R1 University; Home to the Coulter-Drexel Translational Research Partnership program, recognized for leadership in bringing new technologies to market
- The Academy of Natural Sciences of Drexel University is the nation's oldest major natural science museum & research organization



Drexel University Quick Stats

15,498

Undergraduate students

8,692

Graduate students **200** Degree programs

15

Schools and Colleges

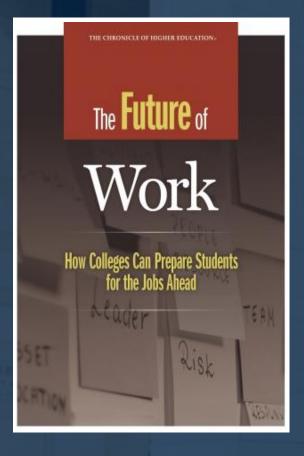
\$110M₊ 1,600₊

in Research Annually Industry Partners



Academic-Industry Partnerships: Building a more comprehensive collaboration.

Talent Challenges for Employers



"As the job market becomes more dynamic, and as employers look for increasingly unnatural combinations of skills, the most important talent will be harder and harder to find." Page 16

"In the years to come, employers may also have to develop supply chains for talent, seeking out partnerships with higher-education institutions to cultivate the skills they need." Page 16

The Impact of Industry and Academia Partnerships

By integrating research, academics and industry expertise, Drexel University better prepares our students for long-term success through impactful experiential learning opportunities.

Research

Co-op, business solutions via research, consulting, etc

Impactful Experiential Learning

Industry

Academics

Drexel's University-Industry Approach

Drexel's defining characteristics and the current dynamic environment presents an opportunity to address business and societal challenges and reimagine higher education.

Academic-Industry Partnership

Technological Disruption / Innovation Evolution of Higher Education

Drexel University provides:

- R&D for industry
- Talent pipeline and talent development for industry
- Dynamic, relevant, interdisciplinary programs for students, where teams of faculty and students develop research-based solutions to real-world business challenges

Strengths and Benefits of a Centralized University-Industry Engagement Unit

- Shared information, common leadership, and unified goals enable the Drexel Solutions Institute to streamline internal operations and promote diversified engagement types
- Possessing standalone resources and staff, the Drexel Solutions Institute provides a central unit which assists in ensuring corporate partnership opportunities align to the University's strategic objectives
- Implies and communicates the interdisciplinary nature of the University to external stakeholders
- Offers the portfolio of partnership opportunities from across the institution
- Streamlines communication and relationships with companies
- Provides a collaborative approach which reduces internal friction and mission creep
- Promotes better understanding of partners' needs and deepens the relationship of faculty and the university with them
- Provides unambiguous signal of accessibility and strength to external partners



Drexel Solutions Institute: Industry's Gateway to Drexel University

The Drexel Solutions Institute is the gateway for industry to connect to Drexel University's expertise and world-class resources to design custom interdisciplinary solutions tailored specifically to that organization and its people.

The Drexel Solutions Institute (DSI) collaborates with industry primarily through three main verticals:

- Talent acquisition
- Talent development
- Interdisciplinary R&D business solutions

Drexel Solutions Institute: Overview

Vision: To create cohesive and collaborative relationships with organizations that benefit Drexel's students, faculty, and alumni from across the University.

Mission: The Drexel Solutions Institute's mission is to draw from the resources across Drexel University to bring innovative solutions to our partners through interdisciplinary, research-based solutions. These industry partnerships not only lead to powerful innovations and long-term growth opportunities for our partners, but also assist in shaping and guiding Drexel's curriculum to root academic programming in industry insight to better prepare students, alumni, and faculty alike for the workforce of the future.

Core Values: Transparency, collaboration, trust-worthiness



Drexel Solutions Institute: Our Objectives

- Deepen and strengthen University partnerships in the areas of talent development, talent acquisition, and research and development
- Promote the distinct value proposition for partnering with Drexel University including the opportunities to engage faculty and train students while pushing the R&D and teaching capabilities of the University in new and innovative ways
- Assist faculty to push knowledge in interesting and cross-disciplinary ways which can ultimately be imparted to students
 - Ensure that engagements assist faculty in developing more market-centric curriculum that is aligned with today's industry needs
 - Align partnership engagements to Drexel University's mission and ensure that opportunities highlight the University's capabilities through interdisciplinary collaboration
 - Present a unified front to industry partners and the public

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The Drexel Solutions Institute

Solutions

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nstitute

Steinbright Career Development Center

Helping to connect firms with top-tier talent through Drexel's 100-year old Co-op program.

Institutional Advancement

Providing guidance to companies and individuals wishing to support the university financially. Office of Research and Innovation

Connecting firms with interdisciplinary R&D opportunities for customized business solutions.

Colleges, Schools, & Drexel Online

Industry insight guides our academic programming – better preparing our students for the workforce of the future.

Office of University & Community Partnerships

Building and growing relationships with firms that benefit and support our community.

Drexel Solutions Institute Timeline

The Drexel Business Solutions Institute is launched. Housed within Drexel's LeBow College of Business.

Hiring Phase 1 complete.

Drexel Business Solutions Institute website launched, and marketing collateral completed.

Hiring Phase 2 complete.

The Drexel Business Solutions Institute is rebranded the Drexel Solutions Institute.

DSI officially reports directly to the University's President. Overseeing Universitywide training and initial implementation of CRM.

Supporting the University's COVID-19 Return Committee.

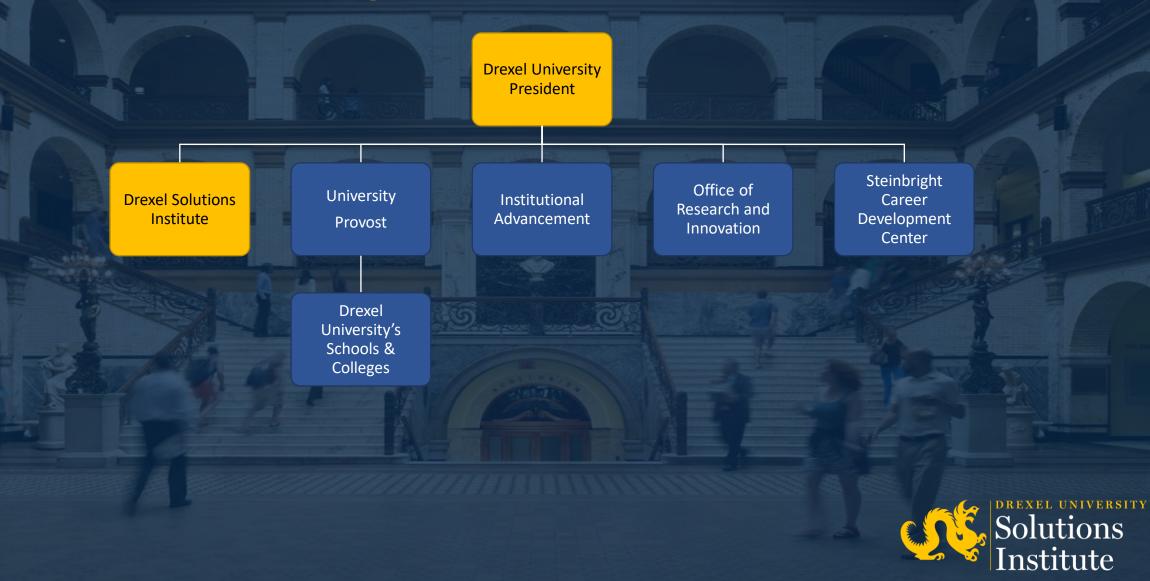
Fall 2018





Spring 2020

Organizational Structure



Industry Partners

Independence

SEI New ways. New answers.*















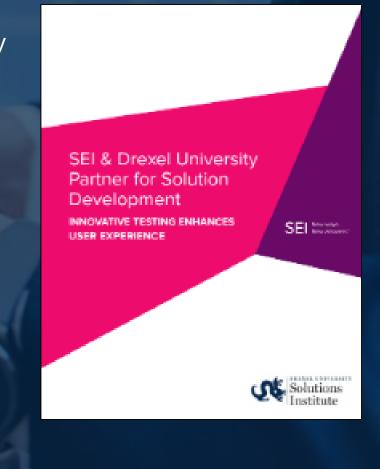


LOCKHEED MARTIN



SEI & Drexel University Partnership

- In 2015, SEI partnered with Drexel University's LeBow College of Business and School of Biomedical Engineering to plan a usability study for SEI's consumer-facing wealth-management portal
- The study was conducted at Drexel LeBow's Behavioral Science Laboratory and utilized Drexel's scientific and rigorous approach including
- The study included 37 participants across various demographics, including SEI clients, Drexel-recruited non-SEI-related individuals, and select SEI employees with limited knowledge of the technology solution
- fNIR, eye tracking, and stimuli presentation computers were used to objectively measure visual search, efficiency, and usability



SEI & Drexel University Partnership

- SEI's main objective is to form multi-dimensional, multi-faceted relationships with our academic partners
- The SEI and Drexel University relationship is dynamic and varied. From leveraging the university's research capabilities via the Usability Study, to bringing industry to students by way of class projects to participating in data thon bootcamp – SEI and Drexel University have found innovative and outside-of-the-box ways to collaborate.



How SEI and Drexel University Partner

Ways in which SEI and Drexel University collaborate include:

- 1. Tangible deliverables for SEI (ex. Usability Study, R&D, technologies, etc.)
- 2. Research and market insight.
- 3. Utilizing the broader academic ecosystem as an information and networking resource.
- 4. Access to great talent via Drexel University's 100-year-old Co-op program.



Questions?

For more information on the Drexel Solutions Institute, visit: drexel.edu/solutions-institute/

THEFT



UIDP CONNECT 2020 WORKSHOP: STRATEGIC CONSIDERATIONS FOR TRANSITION TO CORPORATE ENGAGEMENT CENTER

Melissa Erekson Assistant Vice President for Corporate Engagement

September 21, 2020





PennState Corporate Engagement Center





About Penn State

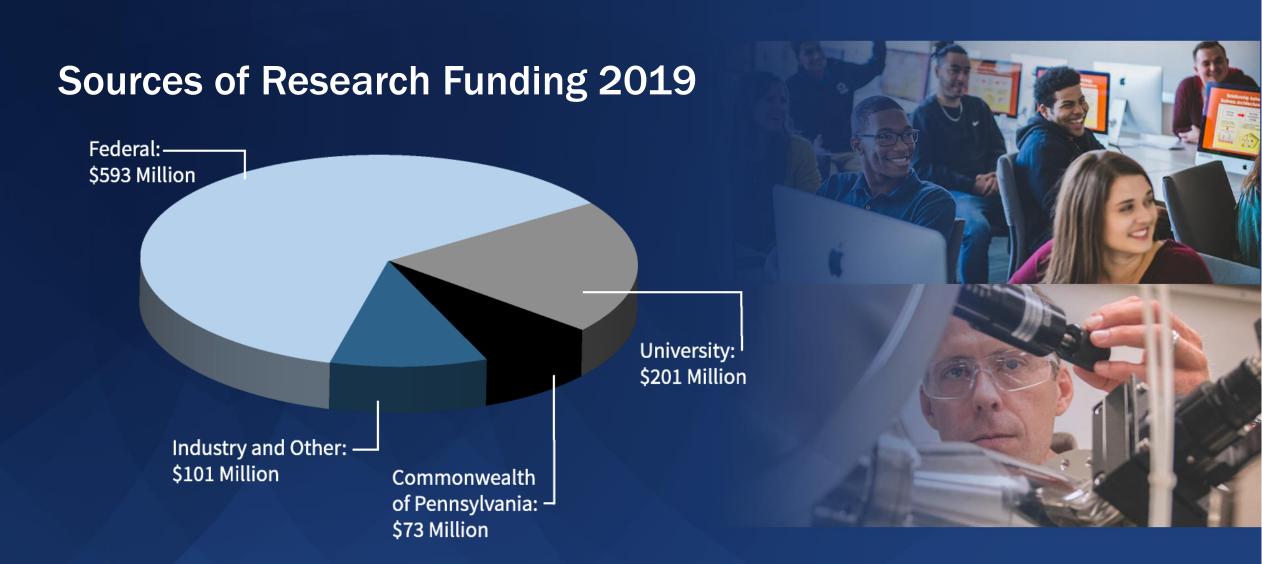
22 Campuses + World Campus

- -89,145 total enrollment
- -14,000 graduate students

-43% of all ranked doctorate programs at Penn State are in the top 10% of their fields
17,000 Faculty & Staff

-More than 5,300 active researchers









Penn State Alumni





Corporate Engagement Opportunities



Research and Innovation



Recruit Talent



License Technologies



Entrepreneurship & Startups



Strategic Philanthropy



Executive, On-line, and Continuing Education





2018 – Consultant GG&A looked at Existing Structure

Corporate and Foundation Relations

- Reporting to University Development
- Focus on corporate and foundation philanthropy
- Staff Principals on corporate partnerships that cross multiple colleges

Office of Industrial Partnerships

- Reporting to Vice President for Research
- Focus on industry sponsored research and tech transfer

Career Services

- Reporting to Student Affairs
- Focus on enhancing career opportunities for students through employer engagement

GG&A Key Findings

- Significant opportunity exists to grow both corporate philanthropic support at Penn State
- Focus on corporate partners should be strategically aligned with University strategy and should focus on total revenue (philanthropic plus research)
- Internal stakeholder analysis observations showed areas for improvement (identity, clear priorities, use of communications)





GG&A recommendations

 $\sqrt{1000}$ Integrate Corporate Relations & Office of Industrial Partnerships to form one team $\sqrt{1000}$ Hire Assistant VP to develop and execute strategy, goals/metrics, staffing plan, communications strategy, big ideas.

 $\sqrt{1}$ Prioritize holistic engagement to maximize revenue, creating win-win

 $\sqrt{10}$ Develop University-wide strategy, aligned with strategic plan and campaign

* Collaborate with key stakeholders across the University

Timeline

• Fall 2018

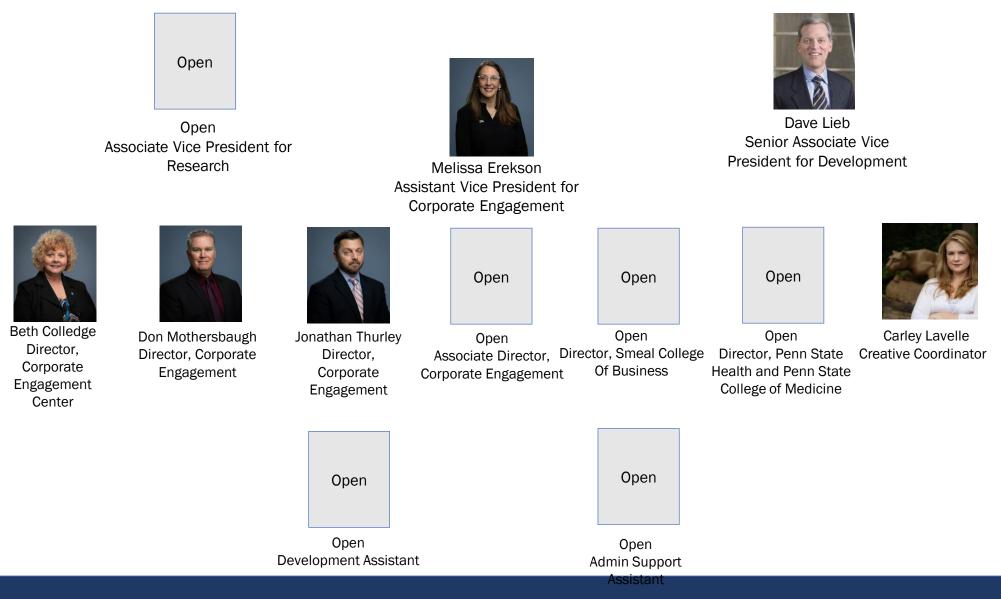
- Spring 2019
 - AVP hired

- Existing staff co-located
- Search for AVP commences

- Mission and Strategy Developed

Fall 2019 Launch of Corporate Engagement Center





PennState Corporate Engagement Center

Corporate Engagement Center Extended Team

University Career Services



Jennifer Stubbs

Assistant Director,

Central Liaison

Brianne Lippert Assistant Director,

Colleges Liaison



Nicole Darling, Campuses Liaison

College of Medicine



Jessica Kiely Associate Director

Operations and Research



Michelle Hutnik Director Research Analytics and Communications



Rebekah Stout Senior Research Analyst



Meg Hoskins Sustainability Institute C Liaison



David Fecko Industry Relations Coordinator, Materials Research Institute



Ashley Chan Industry Liaison, Eberly College of Science



Research and Principal Gifts

Rob Jackson, Principal Gifts, Campaign Imperatives, and Foundations



Priya Baboo Director of Industry, College of Engineering





Senior Director, Corporate Todd Price Strategy and External Institute for Data and Engagement, Behrend Computational Sciences Liaison



Mission

The Penn State Corporate Engagement Center maximizes the benefits of strategically aligned university-industry relationships. Serving as the gateway to the university, the Corporate Engagement Center works with corporate partners, faculty, and staff to discover synergies around education, research, and workforce development in pursuit of positive global impact.





Where WE ARE today

- \$26.1 million industry funded research awards, up from \$21.9 FY19
- \$71.8 million corporate philanthropy, up from \$69 FY19
- Directors of Corporate Engagement focused on:
 - Shift from reactive to proactive: strategy development
 - Portfolios comprised of companies with high level activity across multiple colleges/campuses in research, talent, and philanthropy
 - PA Fortune 500 Companies

Case Study - Wabtec

On behalf of Wabtec, I am thrilled to commit to this strategic alliance with Penn State, which affords us access to a world-class research institution with all of the resources it has to offer. We are at a pivotal moment with the recent merger with GE Transportation, and we are poised to accelerate our and growth. In the long term, I am hopeful that this partnership will result in exciting opportunities not only for our employees and Penn Staters, but more importantly, for the people and communities that depend on Wabtec technology every day. -Alan Hamilton, General Manager, Wabtec Corporation



Case Study – Comcast

- PA Headquartered Fortune 500 Company
- Close to 900 alumni employees, 6 SVP and above
- Corporate Engagement connected to most engaged alumni exec:
 - Company moved to 3rd strongest on campus recruiter
 - Connected to Military and Veterans Affairs and Chief Sustainability Officer
 - Research and Entrepreneurship queued up



Questions?

Melissa Erekson mpe5239@psu.edu 814-865-0023



PennState Corporate Engagement Center





LINK LICENSE LAUNCH

Virginia Tech's platforms for partnership & innovation.

UIDP Academy Workshop SEPTEMBER 2020



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Our roadmap for discussion.

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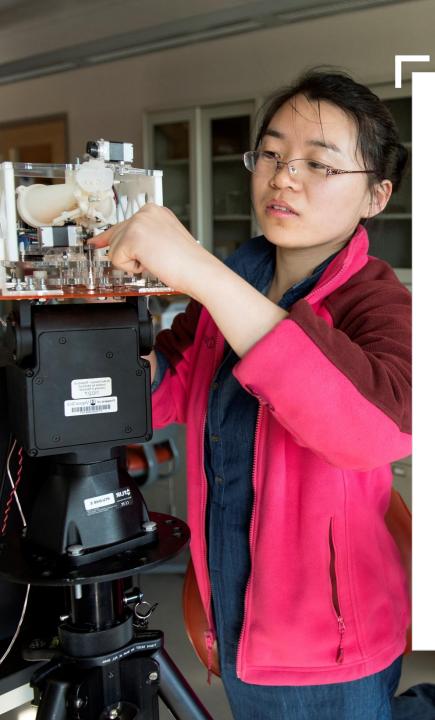


Γ 01 VIRGINIA TECH



MEET VIRGINIA TECH

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VIRGINIA TECH

As the Commonwealth's most comprehensive university and its leading research institution, Virginia Tech fulfills a land-grant mission – to create, convey, and apply knowledge to expand personal growth and opportunity, advance social and community development, foster economic competitiveness, and improve the quality of life through teaching and learning, research and discovery, and outreach and engagement.

Our heritage as a land-grant institution, commitment to use-inspired programs, and our designation as one of six senior military colleges in the country, has laid the foundations of a strong, value-centered culture. Our motto, *Ut Prosim* (That I May Serve), is lived by our community and a distinguishing factor that makes Virginia Tech one of the top recruiting schools in the nation and a loyal and engaged alumni base.

- ► 33,000+ students
- Nine colleges
- \$500M+ research portfolio
- + Use-inspired R&D
- + One of six military schools
- + Land grant mission of service

- + 100+ locations across the Commonwealth
- + Pioneering new models of interdisciplinary education
- Expanding footprint with a new Innovation
 Campus focused on high tech

PARTNER FOR IMPACT

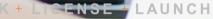
#5 Nationally in awarded engineering degrees American Society of Engineering Education

Top-rated engineering and computer science graduates Wall Street Journal Recruiter

#5

#13

Best engineering (includes CS) under-graduate program U.S. News & World Report



We love Virginia Tech students – they have the expertise and capabilities to hit the ground running and the work ethic, team orientation, and grit to succeed."

Sonu Singh President and Founder, 1901 Group

POWERING TALENT PIPELINES





HOW WE LEARN

Hands on, minds on.

LINK + LICENSE + LAUNCH

WHAT WE SOLVE

Problems that matter.

WHAT WE DO

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Cutting edge science & technology.

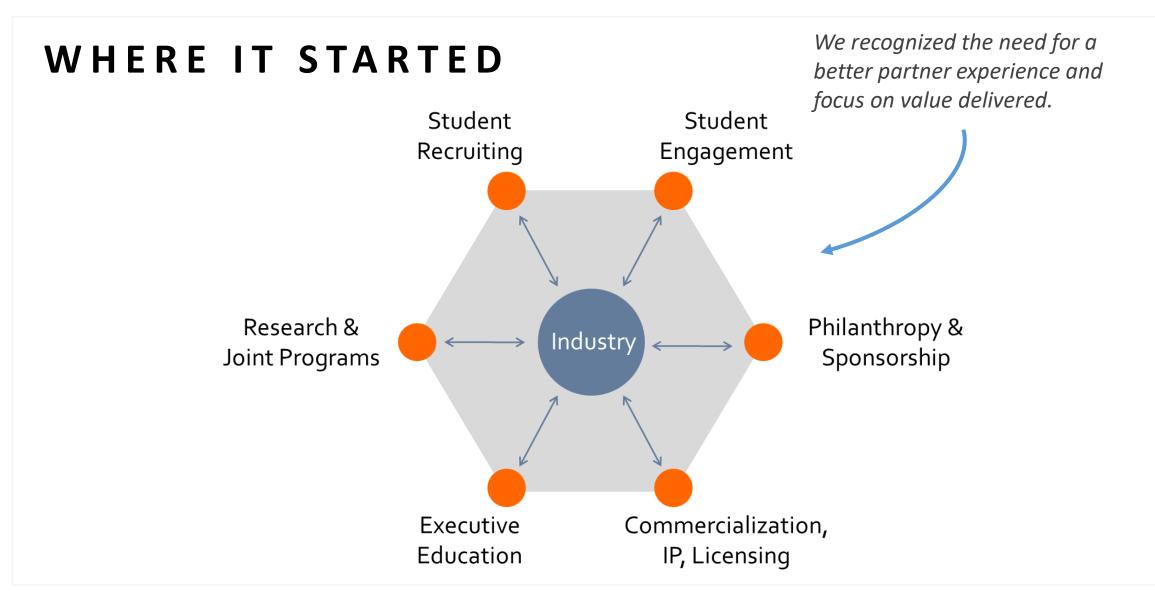


COMPUTER SCIENCE

11

INK LICENSE LAUNCH







DISCOVERY TO MARKET MATTERS

Faculty and student recruitment and retention

Value creation and knowledge dissemination

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Entrepreneurial initiatives and culture

Bayh-Dole Act to protect and promote IP created with federal funding

Economic development and public good

Commitments to the community and the Commonwealth

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WE'RE NOT ALONE



OFFICE OF INDUSTRY COLLABORATION



Office of Industry Collaboration 75 Fifth Street, NW Suite 470 Atlanta, GA 30332-0390 Telephone: 404.407.8078

The Office of Industry Collaboration (OIC) supports corporations seeking a substantial strategic relationship with Georgia Tech and can help tailor your company's needs with the university.

OIC works with units across campus to seamlessly craft, nurture, and expand an "Institute-to-Corporation" relationship tailored to the needs of the company. OIC also assesses market opportunities, develops corporate access strategies, and supports public-private funding opportunities. Our team provides personalized service to companies of all sizes and is ready to help your company remain competitive by discovering what's new and what's next.

More information about working with Georgia Tech.





LL L+



A WORKING MODEL

BECBUSINESS ENGAGEMENT CENTER UNIVERSITY OF MICHIGAN

\$38.3M

2007

\$142.8M

2017



D2M'S A CIRCLE

Learning, building, impact

- Showcases and events
- Impact assessments and case studies
- Communications and story telling
- Tools and method development
- Education and training
- Convening and listening

DISCOVERY TO MARKET Leading front-end strategy, business growth and partnerships

- Strategic planning
- Sponsored research
- Philanthropy
- Life-cycle asset management
- Experiential/industry educational programs
- Grand challenges
- Innovation Labs

Driving commercialization and new ventures

- Market & technology intelligence
- Options and licensing
- Investment and start-ups
- Teaming and education
- Patents and assets
- Business competitions

Г D2 LINK LICENSE LAUNCH



WE ARE A ONE-STOP SHOP FOR INDUSTRY PARTNERS

Advancing partnerships

- Holistic and portfolio approach
- Focused on value to companies
- Creating multi-faceted and long-term engagements

LICENSE

Commercializing technologies

- Connecting to markets
- Identifying, assessing, and managing IP
- Licensing technologies
- Coupled to affiliate organization, VTIP

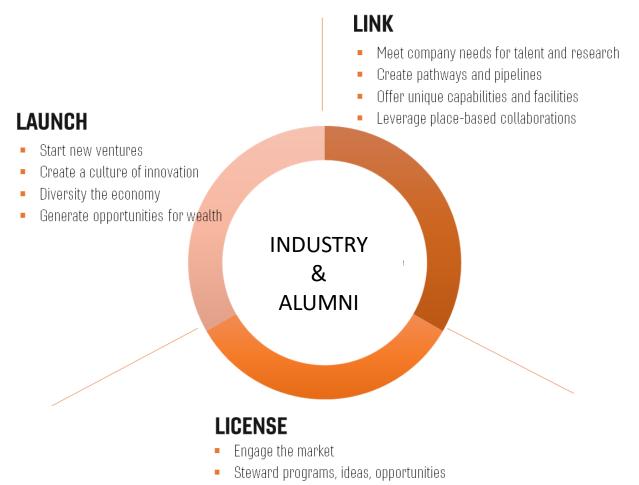
+ LAUNCH

Starting new ventures

- Shaping and enabling start-ups
- Supporting idea proof-of-concept
- Connecting to entrepreneurs and investors
- Building the innovation ecosystem

HOW WE WORK

OUR FLYWHEEL



Transition technologies

You're trying to change the world. So are we. Let's do it together.

WAYS TO ENGAGE

We support a full range of opportunities.

Our team is dedicated to put the Virginia Tech value proposition to work for partners. Together, we craft strategic alliances that bring near and long term value. We can work with you to craft a strategic plan to guide the partnership or offer ways to tap into existing opportunities, experiences, research programs, and more. We look forward to sharing other ways we are engaging with partners and finding opportunities that drive your business.

+ Sponsored research

- + Experiential learning
- + Advisory board opportunities
- + Industry affiliate programs
- + K-12 pathway initiatives
- Inclusion and diversity programs
- + Alumni networks
- + Industry roundtables

- + Technologies for licensing
- + Virginia Tech start-ups
- + Co-location opportunities
- + Recruiting opportunities
- + Sponsorships and branding
- + Corporate Alumni Chapters

Let's get started.

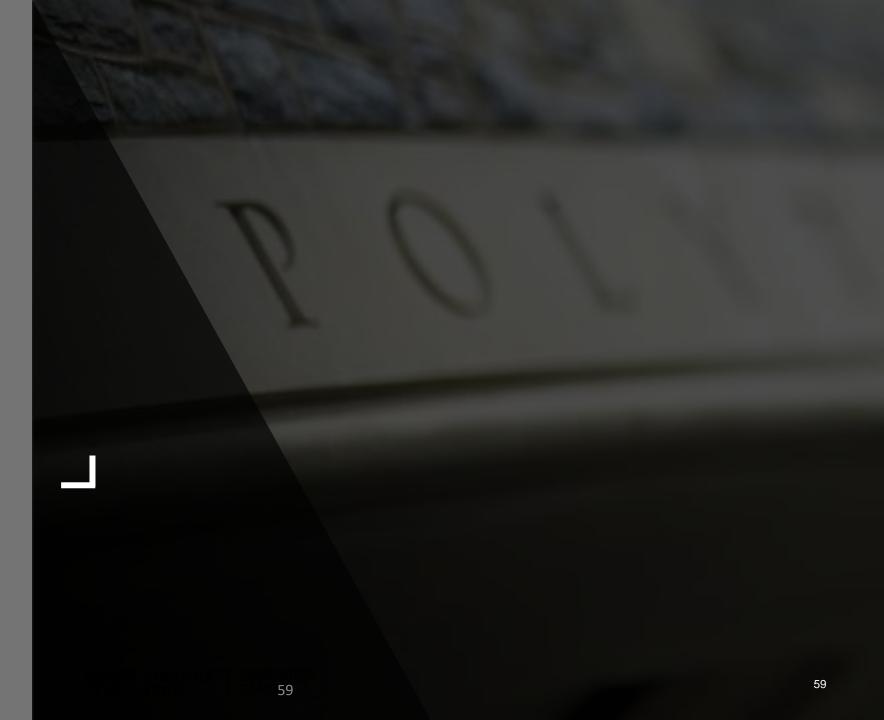
Innovation sessions



WE ENABLE BIG IDEAS.

Companies are looking for game-changing opportunities and we deliver. With projects like the Commonwealth Cyber Initiative and the Innovation Campus, Virginia Tech is catalyzing growth that is helping Virginia become the next best tech sector hub.

F OS PLATFORMS AND PROGRAMS



COMMONWEALTH CYBER

A \$20M PER YEAR MULTI-UNIVERSITY PARTNERSHIP LED BY VIRGINIA TECH TO ENSURE VIRGINIA IS THE DESTINATION FOR NEW SOLUTIONS AND TALENT IN CYBER.

CCI serves as an engine for research, innovation, talent development, and commercialization of advanced cybersecurity technologies at the intersection of data, security, and autonomy. 5G security is a major thrust and CCI is building a state-wide 5G test bed now. The hub is led by Virginia Tech and includes \$10M per year for research, innovation and entrepreneurship programs and operations. \$10M is allocated to the hubs, including one in Southwestern, Virginia for faculty recruiting, programs, equipment, facilities, and scaling.

- + 320 researchers working together
- + 21 universities
- + 16 community colleges
- 87 companies

- + \$60M in submitted proposals in first six months
- + One state-wide network
- + A 5G test bed underway





WIRELESS @ VIRGINIA TECH

WITH A LEGACY THAT DATES BACK TO THE 1900'S, VIRGINIA TECH HAS BEEN PUSHING NEW FRONTIERS IN COMMUNICATIONS TECHNOLOGIES.

The program foundations include radio research, birth of cellular, GPS, to spectrum sharing. Countless awards have been made from leading agencies including NASA, DARPA, DOD, and industry partners. The mission includes producing students prepared to make advances in wireless networks and technologies and to perform pioneering research that impacts next generations wireless networks and technologies, through:

- + 18 core faculty
- + 85 graduate students majoring in wireless communications
- + 135+ graduate students total
- + 75+ projects underway
- + Industrial Affiliates Program

Cognitive and dynamic spectrum access systems

Wireless and spectrum security

Emerging communications networks

Applied signal processing

RF analysis and technologies

THE CALHOUN DISCOVERY PROGRAM

IN THE HONORS COLLEGE, THIS PIONEERING PROGRAM IS BUILDING BRIDGES ACROSS THE TRADITIONAL DIVIDES OF ACADEMIA.

- and bridging the gap between traditional university studies and the skills that employers are demanding.

Through an intensive, hands on approach, Virginia Tech sources top talent in target high-schools. Students in the inaugural cohort are collaborating across academic boundaries, tackling real-world data sets, and partnering on campus with industry experts, such as those from Boeing, Caterpillar, GE, and SHARE Charlotte, a North Carolina-based nonprofit.

Graduates will be job-ready from day one - redefining the notion of workforce development as well as outlining the framework for an enriched academic experience across the Virginia Tech enterprise. Robert Smith, a Boeing Senior Technical Fellow, works hands on with students as a Calhoun Discovery Program Distinguished Professor of Practice.



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QUALCOMM THINKABIT LABS

A MULTI-YEAR COLLABORATION BETWEEN QUALCOMM AND VIRGINIA TECH IS TURNING YOUNG MINDS ON TO TECHNOLOGY.

A combination laboratory, makerspace, and classroom, designed for middle school students in 6th, 7th, and 8th grades, is a model for pathway programs. Activities focus on technical career and college exploration with hands-on engineering and programming activities. The cornerstone facility is in Falls Church, VA; however, our continuing partnership includes establishing in-school "inspired by" labs.

Since opening in August 2016, the Virginia Tech Thinkabit Lab has engaged more than 23,000 visitors on site and 2100 others in off-site programs. Over 90% of students and teachers participating in Thinkabit Lab activities represented Title I schools. Our collaborations and partnerships include 17 school districts and over 300 different schools, camps, or organizations from Northern Virginia, Washington, D.C., and Maryland, as well as Hampton Roads, Central, Western, and Southwestern regions of Virginia.

300 Partner schools

- + Saturday and summer camps
 - Onsite and offsite technical college and
 - career exploration
 - Maker Faire participation
 - + School district STEM leadership training
 - High school and undergraduate

internships

- + Participation in college access collaborative and networks
- + Training in five different robotics platforms



CASE STUDIES





block.one

LINK PARTNERSHIP PROFILE

Block.one

Block.one and Virginia Tech are partnering to develop a new curricula to enhance blockchain programming skills. This is a first step in a comprehensive partnership and platform for blockchain education and research.



Rolls-Royce°

LINK PARTNERSHIP PROFILE

Rolls Royce

For over a decade, Rolls-Royce and Virginia Tech have leveraged Virginia Tech's capabilities in the study of advanced systems diagnostics, flow modeling, power electronics, and other specialties to advance key aerospace technologies. We are one of only three Rolls-Royce University Technology Centers in the United States.



LICENSE & LAUNCH HIGHLIGHTS

Engineering solutions to cancer.

Virginia Tech and AngioDynamics recently strengthened a licensing relationship recognizing the value of key Virginia Tech intellectual property in the field of irreversible electroporation (IRE) and its use in stimulating a cancer-fighting immune response. This specialized IRE technology has been developed in Dr. Rafael Davalos' laboratory.





LICENSE & LAUNCH HIGHLIGHTS

Stemming addiction with behavioral economics.

Virginia Tech enabled a new startup, BEAM Diagnostics, with a license to technology developed at the Fralin Biomedical Institute. BEAM integrates cutting-edge research in Behavioral Economics with advanced technology to improve the lives of individuals suffering from alcohol addiction and other substance use problems.



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This motto explains Virginia Tech and our team ethos. We look forward to working together. $\boldsymbol{\times}$

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Thank you.

Brad Fravel, Ph.D. Executive Director LINK | Center for Advancing Partnerships <u>bfravel@vt.edu</u> LL

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