REPORT OF THE NOVEMBER 17, 2019, INFORMATION SESSION

An information session (open session) for the Board of Visitors was held on Sunday, November 17, 2019, from 1:30 to 4:00 p.m. in the Solitude Room in The Inn at Virginia Tech, in Blacksburg, Virginia. There were no action items, and there was no public comment period. The agenda included:

- Briefing on Link/License/Launch by Dr. Brandy Salmon, Associate Vice President for Innovation and Partnerships, followed by a presentation on the Apex Center for Entrepreneurs by Mr. Sean Collins, Acting Executive Director, which included presentations by three students. Dr. Salmon explained that Link refers to providing a single point of contact for industries wanting to partner with the university, whether in terms of research, consulting, student internships, employment opportunities for graduates, or other activities.   License refers to bringing discoveries to commercialization with VTIP. And, Launch refers to entrepreneurial initiatives and creation of new business ventures. Accordingly, there is a partnership between Link/License/Launch and the Apex Center for Entrepreneurs. Mr. Collins explained that Apex was created in the Pamplin College of Business with a significant donation from the Apex Systems group in 2014, and today more than 2800 students across the university are involved with the Apex Center. Students work in cross-functional teams and mix with industry and alumni mentors. There is the potential for entrepreneurship to transform the undergraduate student experience and be an engagement opportunity for faculty and alumni. Maria Jernigan, founder and CEO of Redshift Education and a 2018 Virginia Tech alum who is now a part-time master's student, told how she created her virtual reality software company, an idea she began to pursue during her senior year. Through virtual reality, high school students figure out how to solve real-world problems. Ali Roghani, founder and president of ThermaSENSE, received a Ph.D. from Virginia Tech. He also recently won the regional competition for global student entrepreneur and is advancing to the next level. His company develops non-invasive sensors to measure internal temperature, which has applications in numerous industries. He noted that Virginia Tech has a major untapped asset in the network of Virginia Tech alumni that should be leveraged. Julia Weber is working on a B.S. in Industrial Systems Engineering and runs the Innovate Living-Learning Community.

- Update on the Innovation Campus by Dr. Brandy Salmon, Associate Vice President for Innovation and Partnerships. Virginia Tech has signed the memorandum of understanding with the Commonwealth. Faculty are being recruited for the MS-Engineering program. The site plan was submitted to the City of Alexandria, and its approval is a significant milestone. Start-up space is being secured for the new VP and Executive Director of the Innovation Campus, a small staff, and classrooms. A search is under way for the new VP.

- Presentation of the new Strategic Plan dashboard by Dr. Menah Pratt-Clarke, Vice President for Strategic and Diversity. The Strategic Plan identified 41 metrics and milestones, and this dashboard presentation focused on the 20 most strategic of them.

Key performance indicators have been identified for each. A number of other milestones are still under development. This is an aspirational plan. Milestones/metrics need to be prioritized and resources identified. The board asked Dr. Pratt-Clarke to incorporate feedback loops into the process.
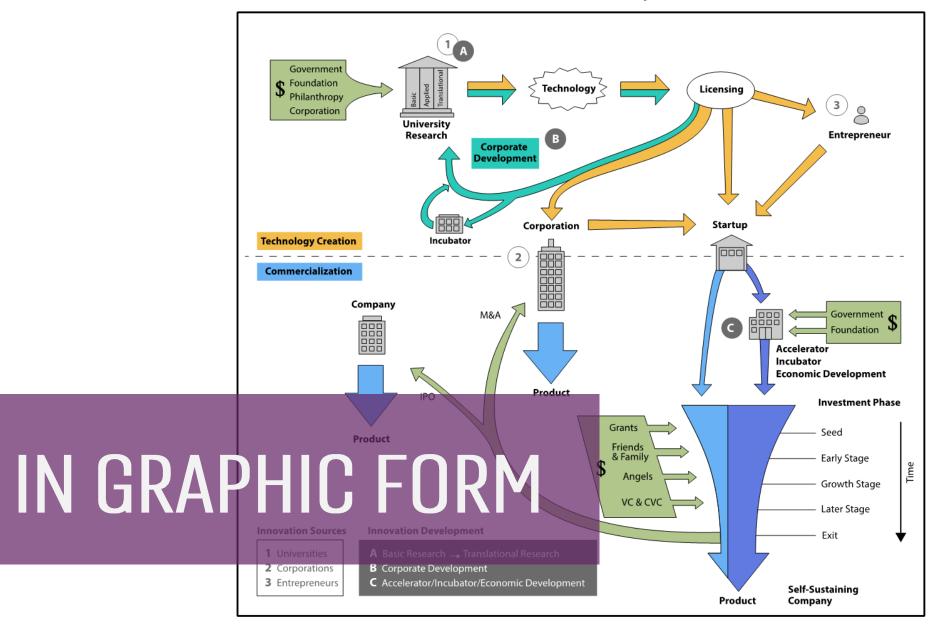
- Presentation on Enrollment by Mr. Juan Espinoza, Director of Undergraduate Admissions. Mr. Espinoza provided several statistics about the current student body, and adjustments are being made to get back on track following the over-enrollment in fall 2019. He noted also that there is currently a great deal of interest in Virginia Tech, and the retention rate of 90 percent is about 25 percentage points above the national average. If the current visitation trend continues, Admissions could potentially have 50,000 visitors to the Blacksburg campus this year. The U.S. Department of Justice asked the national Association for College Admission Counseling (NACAC) to change its code of ethics, which will create more competition among universities to benefit the students and allow them more latitude to change their minds about which school to attend, but it will also create more uncertainty for the universities. A strong communications plan will be developed in order to stay abreast of plans of students who have accepted offers of admission. An Enrollment Advisory Committee has been created and is co-chaired by Provost Clarke and Dr. Luisa Havens Gerardo. Dr. Frank Shushok, Interim Vice President for Student Affairs, then updated the Board on actions taken by Dining Services and Housing and Residence Life to address the fall 2019 over-enrollment situation. Approximately 475 students are being lodged in hotels, and most of the remaining of the over-enrolled students are in triple rooms. To help address dining needs, more food trucks have been added, grab-and-go lines have been added in dining halls, and hours have been extended in dining halls.

- Constituent Reports presented by Ms. Madelynn Todd (undergraduate student rep), Mr. Ryan King (graduate student rep), Dr. John Ferris (faculty rep), and Ms. Tamarah Smith (staff rep).

- Discussion of the Principles of Community led by Rector Valeiras. The Principles reflect the board's and the university's commitment to free inquiry. The Rector called particular attention to the affirmation statements. President Sands added that the Principles continue to be the strength of the university and should be looked to for guidance when issues arise.
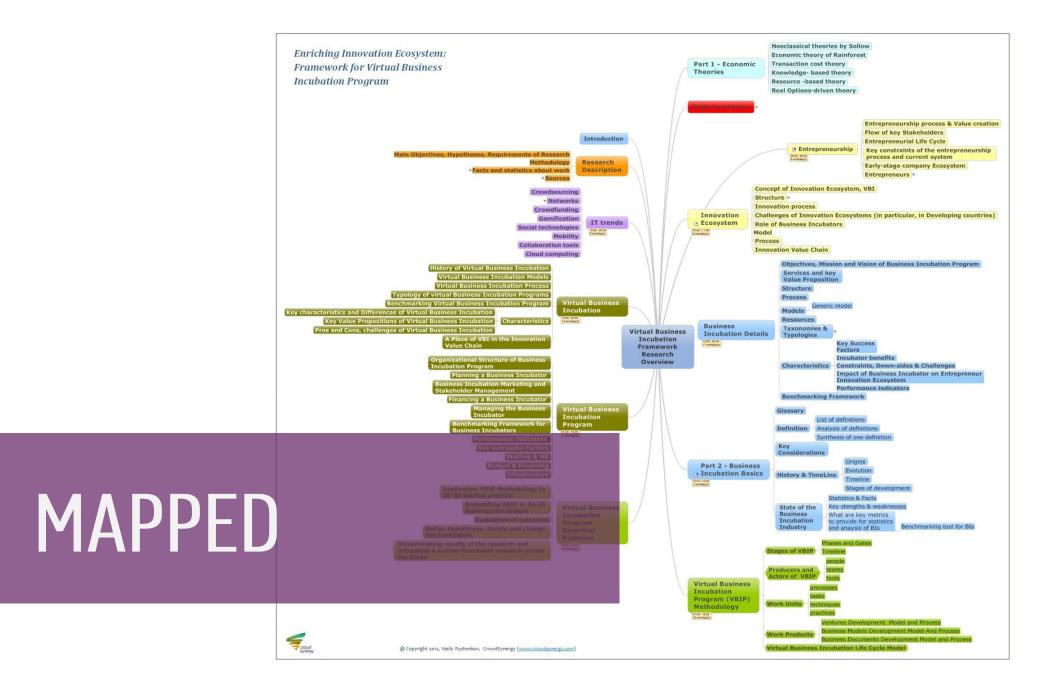
(Copies of the presentations and reports are filed
with the permanent minutes and attached.)

INNOVATION
IT TAKES A VILLAGE
Prepared for the BOV | November 2019

VIRGINIA TECH | INNOVATION CAMPUS

The Innovation Ecosystem

IN GRAPHIC FORM

Enriching Innovation Ecosystem:
Framework for Virtual Business
Incubation Program

MAPPED

Part 1 - Economic Theories
- Neoclassical theories by Sollow
- Economic theory of Rainforest
- Transaction cost theory
- Knowledge- based theory
- Resource -based theory
- Real Options-driven theory

Global problems

Introduction

Research Description
- Main Objectives, Hypotheses, Requirements of Research
- Methodology
- Facts and statistics about work
- Sources

Entrepreneurship
- Entrepreneurship process & Value creation
- Flow of key Stakeholders
- Entrepreneurial Life Cycle
- Key constraints of the entrepreneurship process and current system
- Early-stage company Ecosystem
- Entrepreneurs

IT trends
- Crowdsourcing
- Networks
- Crowdfunding
- Gamification
- Social technologies
- Mobility
- Collaboration tools
- Cloud computing

Innovation Ecosystem
- Concept of Innovation Ecosystem, VBI
- Structure
- Innovation process
- Challenges of Innovation Ecosystems (in particular, in Developing countries)
- Role of Business Incubators
- Model
- Process
- Innovation Value Chain

Virtual Business Incubation
- History of Virtual Business Incubation
- Virtual Business Incubation Models
- Virtual Business Incubation Process
- Typology of virtual Business Incubation Programs
- Benchmarking Virtual Business Incubation Program
- Characteristics
  - Key characteristics and Differences of Virtual Business Incubation
  - Key Value Propositions of Virtual Business Incubation
  - Pros and Cons, challenges of Virtual Business Incubation
- A Place of VBI in the Innovation Value Chain

Business Incubation Details
- Objectives, Mission and Vision of Business Incubation Program
- Services and key Value Proposition
- Structure
- Process
- Models — Generic model
- Resources
- Taxonomies & Typologies
- Characteristics
  - Key Success Factors
  - Incubator benefits
  - Constraints, Down-sides & Challenges
  - Impact of Business Incubator on Entrepreneur Innovation Ecosystem
  - Performance indicators
- Benchmarking Framework

Virtual Business Incubation Program
- Organizational Structure of Business Incubation Program
- Planning a Business Incubator
- Business Incubation Marketing and Stakeholder Management
- Financing a Business Incubator
- Managing the Business Incubator
- Benchmarking Framework for Business Incubators

Part 2 - Business Incubation Basics
- Glossary
- Definition
  - List of definitions
  - Analysis of definitions
  - Synthesis of one definition
- Key Considerations
- History & TimeLine
  - Origins
  - Evolution
  - Timeline
  - Stages of development
- State of the Business Incubation Industry
  - Statistics & Facts
  - Key stengths & weaknesses
  - What are key metrics to provide for statistics and anaysis of BIs
  - Benchmarking tool for BIs

Virtual Business Incubation Program Empirical Evidence
- Performance indicators
- Key successful Factors
- Staffing & HR
- Budget & Financing
- Infrastructure
- Application VBIP Methodology to 20-30 startup projects
- Embedding VBIP in 20-30 Business Incubators
- Evaluation of outcomes
- Refine hypotheses, iterate and change the framework
- Disseminating results of the research and initianting a a cross-functional research across the Globe

Virtual Business Incubation Program (VBIP) Methodology
- Stages of VBIP
  - Phases and Gates
  - Timeline
- Producers and Actors of VBIP
  - people
  - teams
  - tools
- Work Units
  - processes
  - tasks
  - techniques
  - practices
- Work Products
  - Ventures Development Model and Process
  - Business Models Development Model And Process
  - Business Documents Development Model and Process
- Virtual Business Incubation Life Cycle Model

Virtual Business Incubation Framework Research Overview

NARRATED

LINK + LICENSE + LAUNCH

Supporting Virginia Tech from discovery to market

LINK + LICENSE + LAUNCH

Advancing Industry Partnerships | *Driving Technology Commercialization*
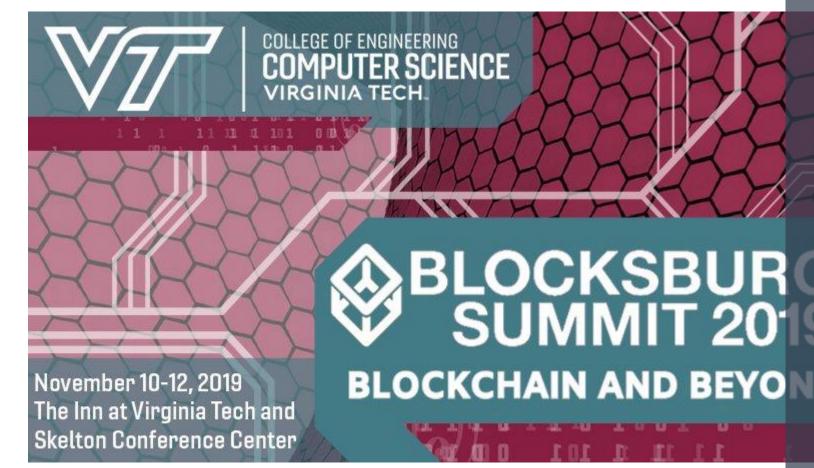*with VTIP* | *Propelling new ventures*

LINK + LICENSE + LAUNCH

Advancing Industry Partnerships

Driving Technology Commercialization

with VTIP

Propelling new ventures

Virginia Tech

PARTNERED

Through a $1.25M gift, Caterpillar has become a second founding partner with the Calhoun Discovery Program in the Honors College, supporting scholarships and experiential learning.

SUPPORTED

Strategic activities like the Blocksburg Summit, 2019 to build big and long-lasting partnerships with industry around emerging technology trends, talent, and innovation.

COLLEGE OF ENGINEERING
COMPUTER SCIENCE
VIRGINIA TECH.

BLOCKSBURG SUMMIT 2019
BLOCKCHAIN AND BEYOND

November 10-12, 2019
The Inn at Virginia Tech and
Skelton Conference Center

AND THEN, HAPPENED: HQ2

INNOVATION CAMPUS
A GAME CHANGER FOR VIRGINIA TECH, HIGHER EDUCATION AND THE NATION

LINK + LICENSE + LAUNCH

Advancing Industry Partnerships

Driving Technology Commercialization

with VTIP

Propelling new ventures

Why discovery to market matters to Virginia Tech (and other leading universities).

01 Faculty and student recruitment and retention

02 Value creation and knowledge dissemination

03 Entrepreneurial initiatives and culture

04 Bayh-Dole Act to protect and promote IP from federal funding

05 Economic development and public good

06 Commitments to the community and the Commonwealth

We support transition of inventions and assets from a wide range of sponsors.

VIRGINIA TECH
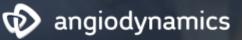
LICENSED

New IP License to GreenShift Corp. to take the fog harp passive water harvesting system to market to support availability of water globally.

GREENSHIFT

UPGRADED

Strengthened relationship with AngioDynamics with a new license fee and doubled royalty rate to recognize the value of key Virginia Tech IP

angiodynamics
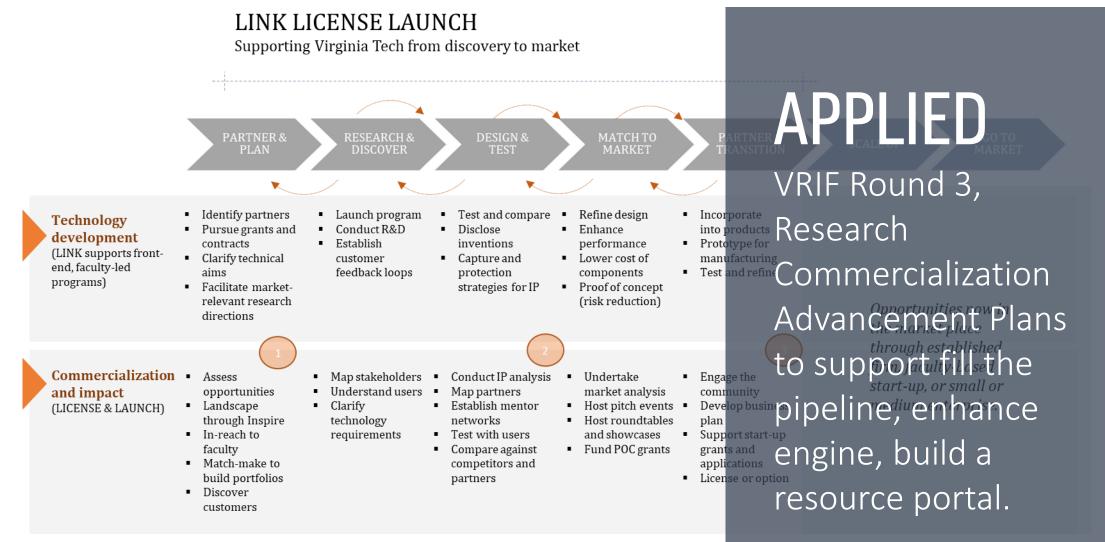
SPUN OUT

Enabled BEAM Diagnostics to spin out so it can improve the lives of individuals suffering from alcohol and other substance use problems.

VIRGINIA TECH

LINK LICENSE LAUNCH
Supporting Virginia Tech from discovery to market

| PARTNER & PLAN | RESEARCH & DISCOVER | DESIGN & TEST | MATCH TO MARKET | PARTNER TRANSITION | SCALE UP | GO TO MARKET |

Technology development
(LINK supports front-end, faculty-led programs)

PARTNER & PLAN
- Identify partners
- Pursue grants and contracts
- Clarify technical aims
- Facilitate market-relevant research directions

RESEARCH & DISCOVER
- Launch program
- Conduct R&D
- Establish customer feedback loops

DESIGN & TEST
- Test and compare
- Disclose inventions
- Capture and protection strategies for IP

MATCH TO MARKET
- Refine design
- Enhance performance
- Lower cost of components
- Proof of concept (risk reduction)

PARTNER TRANSITION
- Incorporate into products
- Prototype for manufacturing
- Test and refine

Commercialization and impact
(LICENSE & LAUNCH)

PARTNER & PLAN
- Assess opportunities
- Landscape through Inspire
- In-reach to faculty
- Match-make to build portfolios
- Discover customers

RESEARCH & DISCOVER
- Map stakeholders
- Understand users
- Clarify technology requirements

DESIGN & TEST
- Conduct IP analysis
- Map partners
- Establish mentor networks
- Test with users
- Compare against competitors and partners

MATCH TO MARKET
- Undertake market analysis
- Host pitch events
- Host roundtables and showcases
- Fund POC grants

PARTNER TRANSITION
- Engage the community
- Develop business plan
- Support start-up grants and applications
- License or option

Opportunities now in the market-place through established firm, faculty-led start-up, or small or medium enterprise

APPLIED
VRIF Round 3, Research Commercialization Advancement Plans to support fill the pipeline, enhance engine, build a resource portal.

2019 highlights: LICENSE & LAUNCH
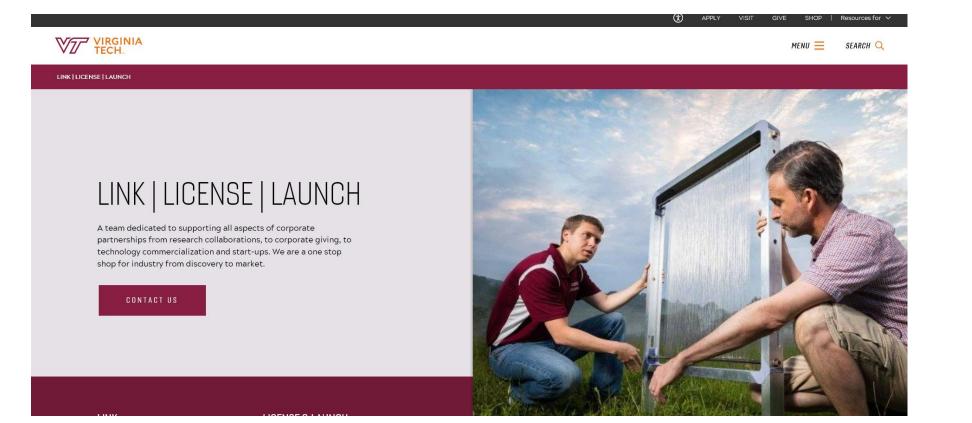
- 19 New IP licenses
- 6 tech startups
- $1.5M+ VTIP license revenue
- 148 New Invention Disclosures received and processed
- 73 patent applications filed + 3 plant variety patents filed
- 51 new patents awarded
- 3 new hires (4 team members now onboard)

To check out: our new website!
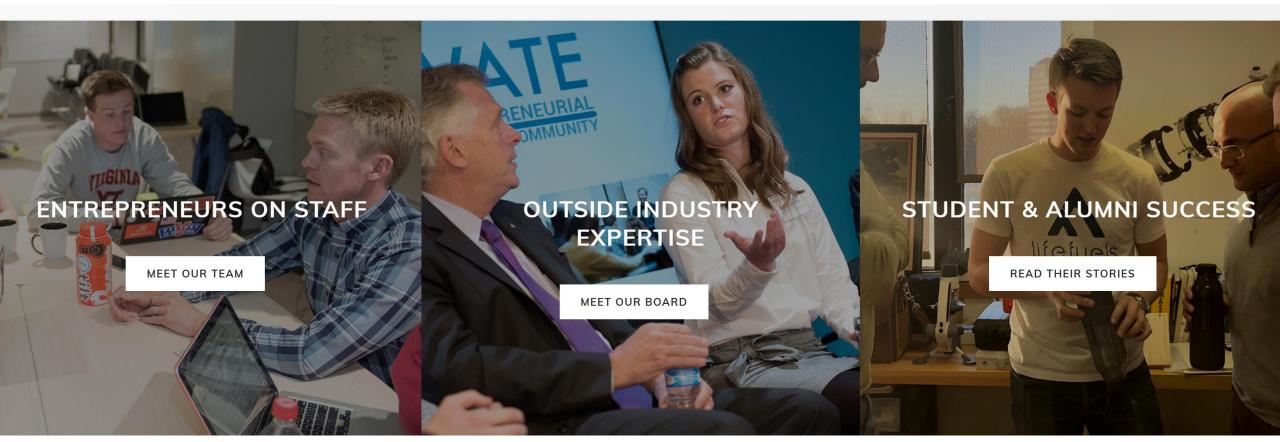
https://vt.edu/link/index.html

VIRGINIA TECH

PAMPLIN COLLEGE OF BUSINESS
APEX CENTER FOR ENTREPRENEURS
VIRGINIA TECH™

2800+
VT students involved in Apex Center programs

130+
Student-led new venture teams launched

100+
Entrepreneurs, alumni and industry partners on campus

ENTREPRENEURS ON STAFF

MEET OUR TEAM

OUTSIDE INDUSTRY EXPERTISE

MEET OUR BOARD

STUDENT & ALUMNI SUCCESS

READ THEIR STORIES

APEX CENTER FOR ENTREPRENEURS

BOARD OF VISITORS

SEAN COLLINS
NOVEMBER 17, 2019

PAMPLIN COLLEGE OF BUSINESS
APEX CENTER FOR ENTREPRENEURS
VIRGINIA TECH™

WHAT WE DO

We inspire and empower our students, faculty, and alumni to turn their passion, purpose, and ideas into **action**.

Act-Measure-Learn-Repeat

APEX / WHAT WE DO

WHY WE DO IT

We believe innovation and entrepreneurship can be a powerful force within **organizations of all types and sizes**, in established businesses as well as new ventures.

HISTORICAL TIMELINE

APEX CENTER NAMED

2014

2015

INNOVATE LLC - ALL 7 COLLEGES INVOLVED
(35 students engaged)

APEX CLOSES NYSE

2016

2017
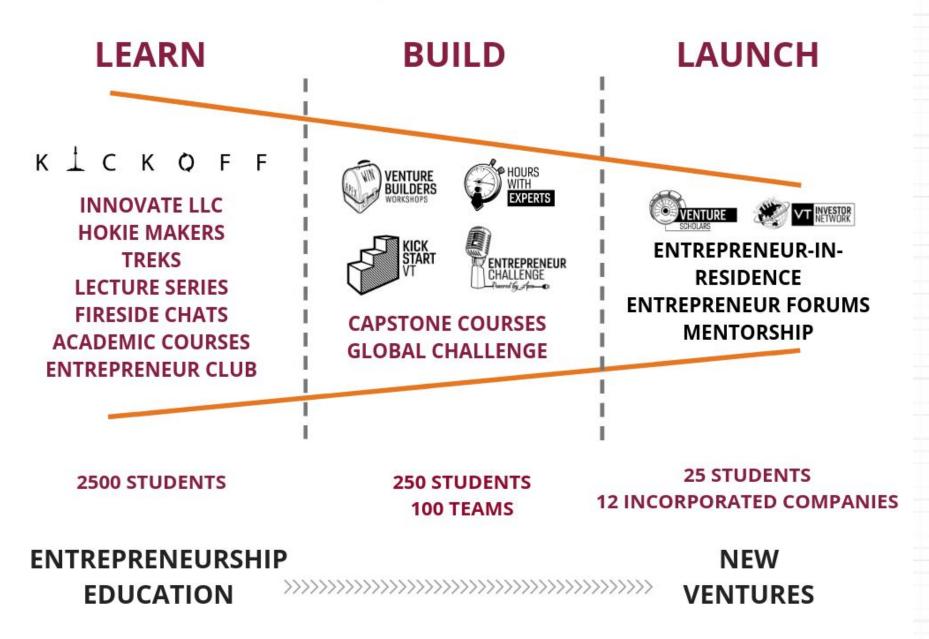
APEX PROGRAM PORTFOLIO BUILD OUT

2018

(>2800 students engaged)

NAMED ONE OF THE BEST EMERGING CENTERS WORLD-WIDE

Areas of University-Apex alignment

NEW EDUCATIONAL PARADIGM

INCLUSION & DIVERSITY

VTC HEALTH SCIENCES & TECHNOLOGY CAMPUS
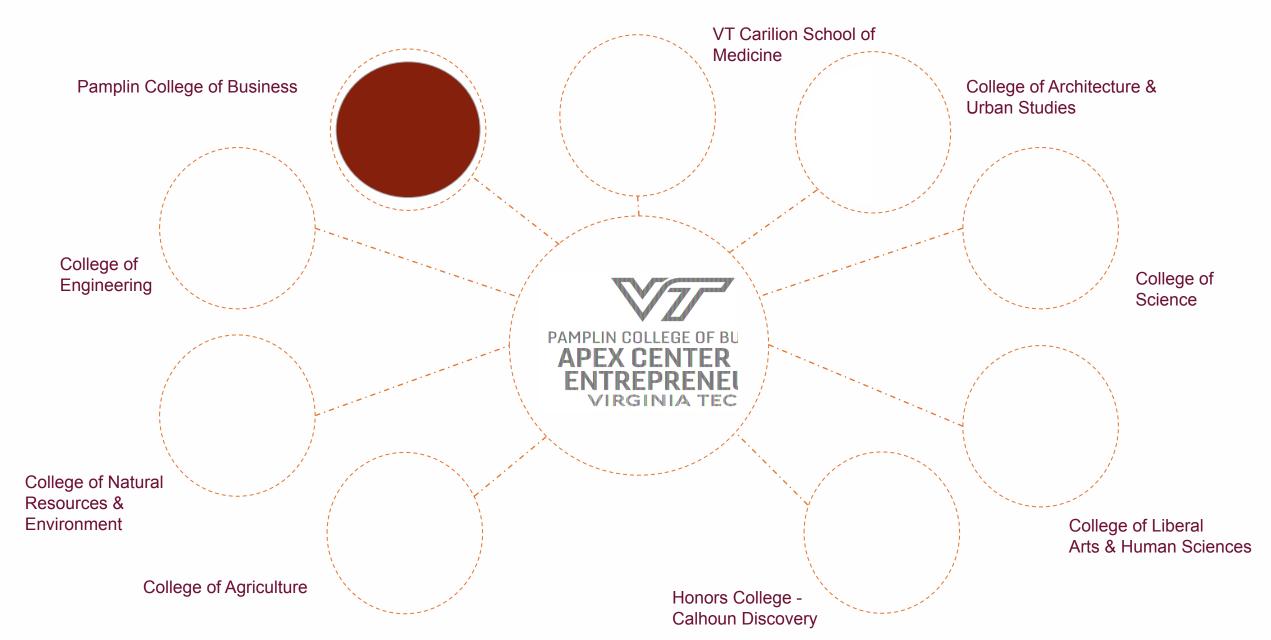
WASHINGTON METRO AREA
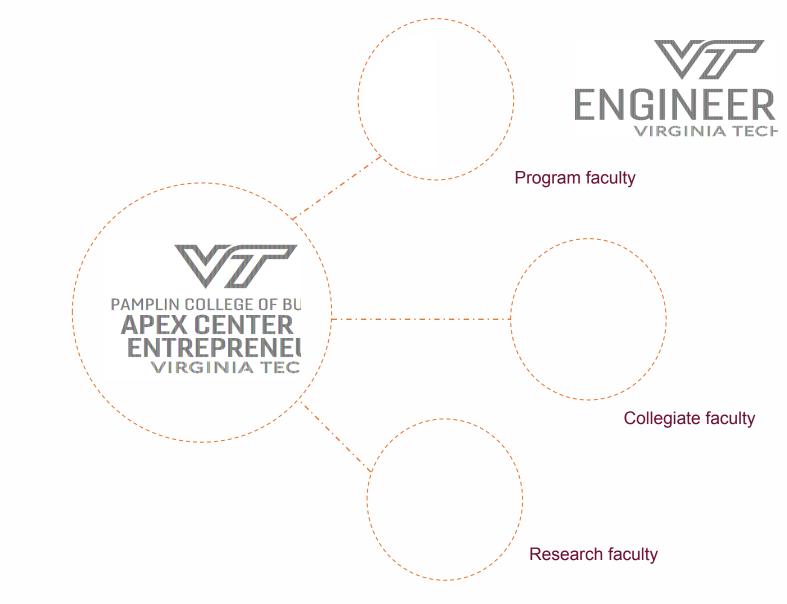
PAMPLIN COLLEGE OF BUSINESS
APEX CENTER FOR ENTREPRENEURS
VIRGINIA TECH.

Proposed University-wide e'ship platform

Proposed College-level "spoke"

Program faculty

Collegiate faculty

Research faculty

LEGACY OF VIRGINIA TECH ENTREPRENEURSHIP

1,815+   # of alumni associated with private

market transactions

366+   # of Virginia Tech affiliated founders

$44.6B   Transaction activity of VT founders

since 2008

$4.2B   Capital investment activity since 2008

Source: PitchBook July 2018

Thank you for your ongoing support of entrepreneurship at Virginia Tech!

QUESTIONS
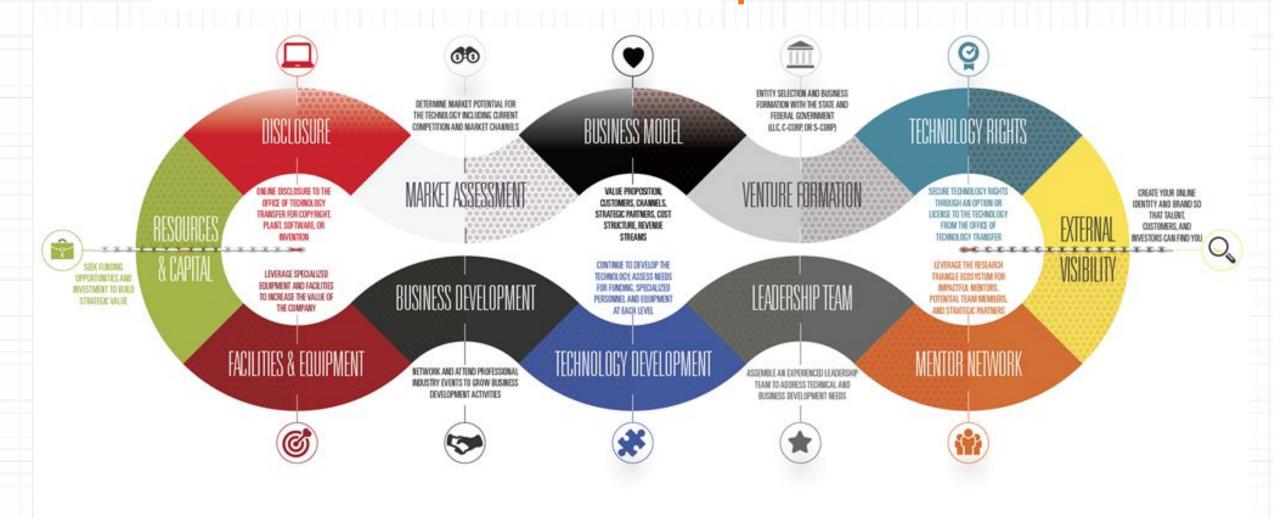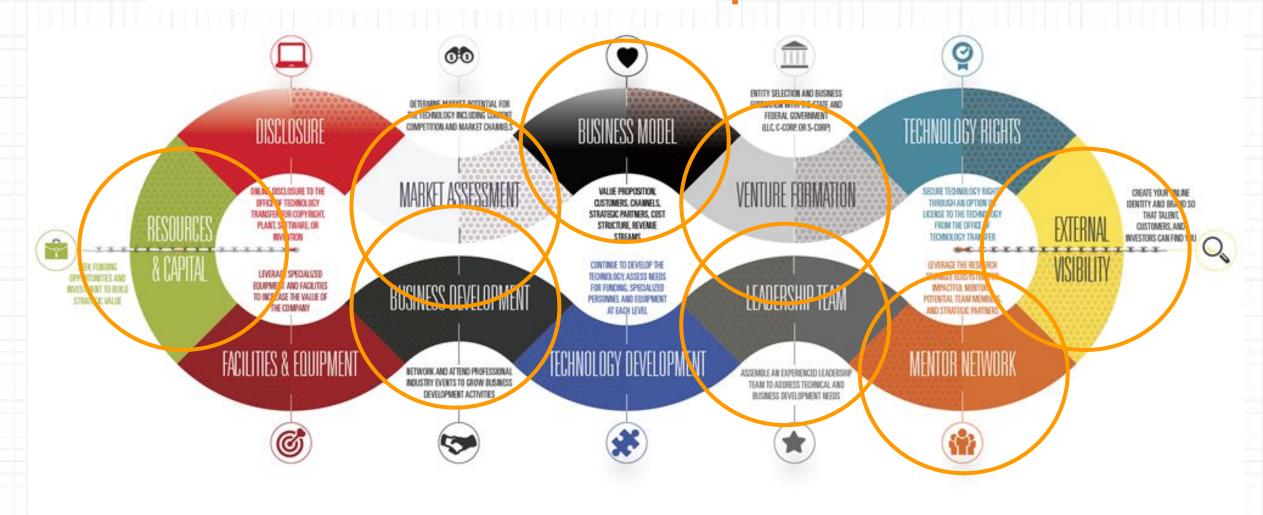
Resource slides

New Venture Development

New Venture Development

Update: Virginia Tech Innovation Campus

Board of Visitors | November 2019

Delivery Team

For Immediate Release: November 7, 2019
Contacts: Office of the Governor: Alena Yarmosky, Alena.Yarmosky@governor.virginia.gov

Governor Northam Announces Plans to Graduate 31,000 in Computer Science, Boosting Tech Talent Pipeline

Agreements with 11 Virginia universities resulted from HQ2 bid

PETERSBURG—Governor Ralph Northam today announced that Virginia will invest in the Commonwealth's tech talent pipeline to create 31,000 new computer science graduates over 20 years, under agreements he signed with 11 universities.

The Tech Talent Investment Program will benefit students and tech employers in every corner of the Commonwealth. It grew out of Virginia's proposal to Amazon, which will locate its second headquarters in Northern Virginia.

The program is a performance-based initiative designed to create at least 25,000 new bachelor's and master's degrees in computer science and related fields over the next 20 years. The agreements with the 11 universities will create 31,000 new degrees in these fields, exceeding the legislative goal. Funding for the Tech Talent Investment Program was provided in the Virginia budget approved earlier this year.

"This initiative is an investment in Virginians," **said Governor Northam.** "Virginia's tech sector will continue booming only if we can train the workforce those jobs require. With today's announcement, we are educating a workforce that will fill jobs at hundreds of tech companies around the Commonwealth, including at Amazon, helping boost our economy and quality of life in every corner of Virginia."

"The Tech Talent program creates clear pathways for Virginia students to obtain high-wage jobs by equipping them with the necessary skills to succeed in high-demand fields," **said Secretary of Education Atif Qarni.** "This agreement with many of our public higher education institutions will support business and industry in Virginia, while preparing our students to enter the 21st century workforce."
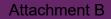
The boom in tech industries in recent years has increased demand for workers, and the Tech Talent program will help Virginia keep pace. Colleges and universities applied to the state for funding to expand their existing computer science degree programs. Subsequent agreements will be established with other institutions, including the community colleges.

"These 11 institutions, and others that will follow, demonstrate the qualities that make Virginia's higher education system among the best in the nation: innovation, responsiveness, alignment with state needs and performance," **said Peter Blake, Director of the State Council of Higher Education for Virginia.**

Commitments to increase MS and M.Eng degrees in computer science & computer engineering by Virginia Tech

Virginia Tech commitment	
Current Baseline:	97
Degree Goal by 2026-27	739
% Growth In-State	50%

Commonwealth commitment	
Capital for Innovation Campus: $167.7M	$167.7M
One-Time Start-Up:	$18.5M
Recurring annual budget:	$3.3M
Total through 2038-39:	$250M

Computer Science M-ENG Degree approved by SCHEV

"

We are excited to launch the new computer science graduate program ... This advanced curriculum is designed to meet the needs of business and industry and will fulfill a critical need in Virginia and across the nation as we seek to fuel the tech-talent pipeline."

- Julie Ross, Dean of College of Engineering

- The State Council of Higher Education for Virginia approved a new master of engineering degree in computer science, the first newly created program for Virginia Tech's Innovation Campus in Alexandria, Virginia.

- The application deadlines will enable Spring and Fall 2020 enrollment.

- Students will be able to choose part-time, full-time, or full-time accelerated programs.

- Degrees will require 30 hours credit hours of graded coursework with topics that include software design and development process, collaborative work skills, and ethical issues related to computing.

- Initial concentrations include courses in AI, computer security, data analytics and machine learning.

VIRGINIA TECH | INNOVATION CAMPUS

Virginia Tech welcomes

Dr. Sara Hooshangi

Ph.D., Electrical engineering, Princeton
B.Eng., Electrical & computer engineering, McGill University
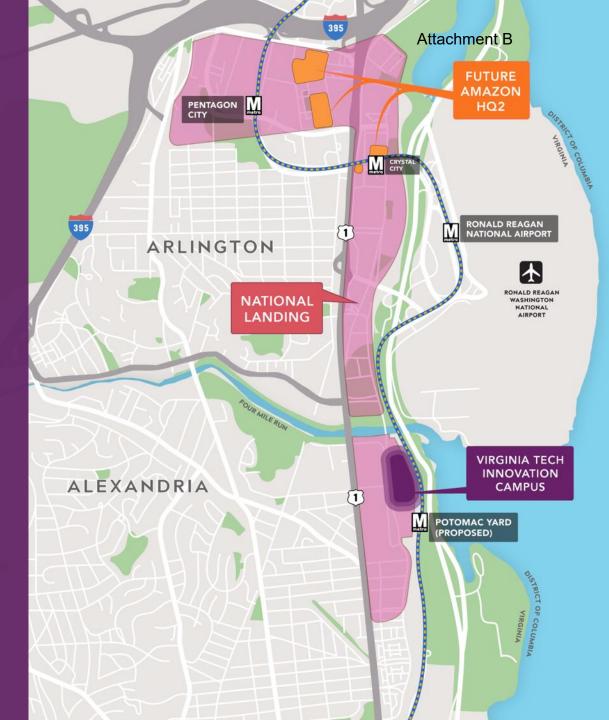
Recruited from George Washington where she served a Program Director; PI on NSF program dedicated to adult leaner pathway programs.

Meet the experts: Innovation Campus Fellows 2019

SITE OVERVIEW

- Situated on 15 acres in Alexandria just south of the Four Mile Run stream

- Anchoring a 65-acre mixed-use district planned in North Potomac Yard

- Will feature classrooms, incubator area for startups, offices for industry collaboration, and space for alumni/ community events

- Located near the new Potomac Yard Metro station planned at the south end of the property

FUTURE AMAZON HQ2

PENTAGON CITY

CRYSTAL CITY

RONALD REAGAN NATIONAL AIRPORT

ARLINGTON

RONALD REAGAN WASHINGTON NATIONAL AIRPORT

NATIONAL LANDING

VIRGINIA TECH INNOVATION CAMPUS

FOUR MILE RUN

ALEXANDRIA

POTOMAC YARD (PROPOSED)

DISTRICT OF COLUMBIA VIRGINIA

VT VIRGINIA TECH | INNOVATION CAMPUS

Innovation Campus master planning is underway. Here, Virginia Tech architect, Liza Morris leads a series of charrettes with the campus community.

Existing conditions of North Potomac Yard
Alexandria, Virginia

Proposed DUSP Concept I Plan to the City of Alexandria, November 1, 2019

WE'RE HIRING

Vice President & Executive Director
Innovation Campus
Expected completion: Jan 2020

Virginia Tech continues to be on the national stage. Here, President Sands is helping launch an AWS Cloud program with other state universities.

Drivers of Development in the D.C. Region: Amazon and Virginia Tech

Here, President Sands on panel with JBG Smith and Amazon at the Urban Land Institute Conference.

We're not alone.

Other universities are recognizing the opportunity and expanding operations and/or moving in. University of Maryland has committed to 8000 square feet in Arlington in a "Discovery Center" proximal to JBG Smith's marketing center and Amazon HQ2.

University of Maryland Builds Ties With Amazon

The university is opening a 'Discovery Center' at Amazon's new headquarters in Virginia.

"

Our biggest risk is thinking too small.

- Glenn Youngkin Co-CEO of the Carlyle Group

Continuous Strategic Planning Annual Milestones Report: *The Virginia Tech Difference*

BOARD OF VISITORS

NOVEMBER 17, 2019

Strategic Priority Milestones

VIRGINIA TECH™

Key Performance Indicator (KPI):

Extramural Research Expenditures

Milestone:
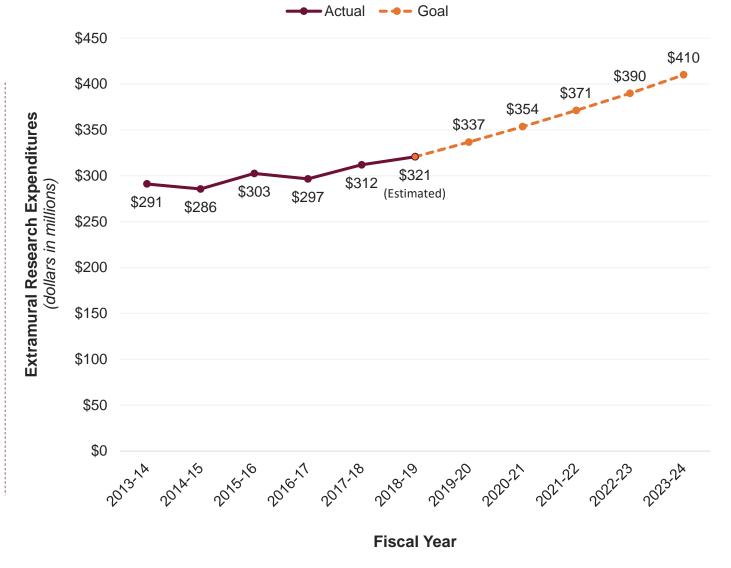
$410 million by 2024

KPI Definition:

Research and development expenditures as reported to the National Science Foundation in the annual Higher Education Research and Development (HERD) survey, less expenditures reported as Institutional Funds.

Notes:

The FY 2018-19 estimate based on Virginia Tech's submission to the National Science Foundation.

Advance Regional, National, and Global Impact

Key Performance Indicator (KPI):

Times Higher Education (THE) World Universities Ranking

Milestone:

Top 13 U.S. public land-grant by 2024

KPI Definition:
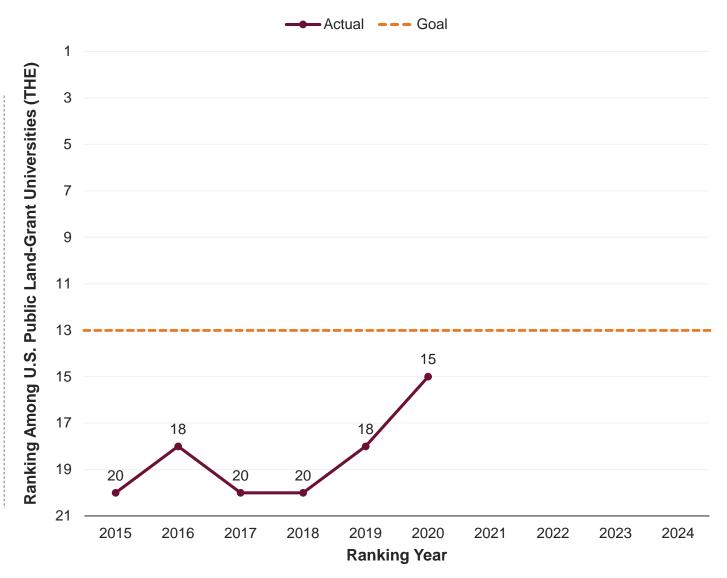
The placement of Virginia Tech by the Times Higher Education World University ranking within the subgroup of all public, Carnegie Class - Very High Research, land-grant universities.

Notes:

In the 2020 THE World University Rankings, Virginia Tech moved up a level from 251-300 to 201-250 ranking globally in the 83rd percentile. Virginia Tech's historical rankings among all universities are as follows:

2015	2016	2017	2018	2019	2020
276-300	251-300	251-300	301-350	251-300	201-250

Advance Regional, National, and Global Impact

Key Performance Indicator (KPI):

Graduate Student Enrollment

Milestone:
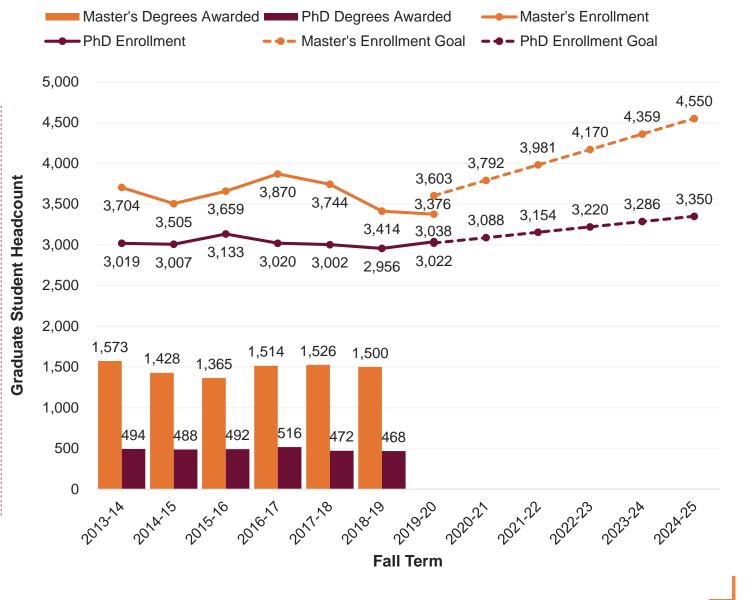
7,900 Master's and PhD students by Fall 2024, including 4,550 Master's and 3,350 PhD students

KPI Definition:

The headcount total of all students classified as graduate students seeking a Master's or PhD degree across all campus locations.

Notes:

The university also has graduate students earning Doctor of Veterinary Medicine (DVM) and Doctor of Medicine (MD) degrees that are currently not included in the milestone to grow graduate enrollments.

Advance Regional, National, and Global Impact

Key Performance Indicator (KPI):

Internationally and Nationally Recognized Faculty Awards

Milestone:

Top 1/3rd (66th percentile) by 2022
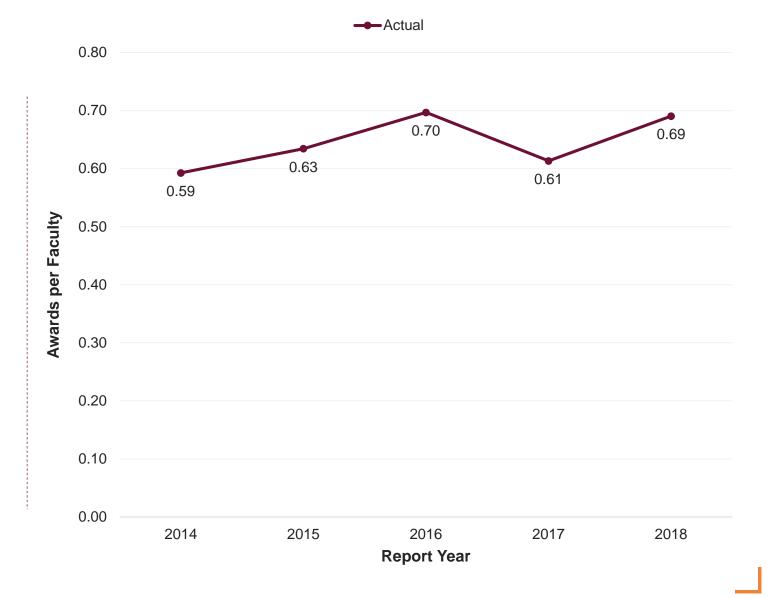
KPI Definition:

Awards per faculty as reported annually in the Academic Analytics database.

Notes:

Virginia Tech's percentile placement among the subgroup of all public, Carnegie Class - Very High Research universities has been as follows:

2014	2015	2016	2017	2018
56th	57th	60th	55th	56th

— Actual

Awards per Faculty vs. Report Year: 2014: 0.59, 2015: 0.63, 2016: 0.70, 2017: 0.61, 2018: 0.69

Advance Regional, National, and Global Impact

Key Performance Indicator (KPI):

Internationally and Nationally Recognized Faculty Publications

Milestone:

Top 1/3rd (66th percentile) by 2022
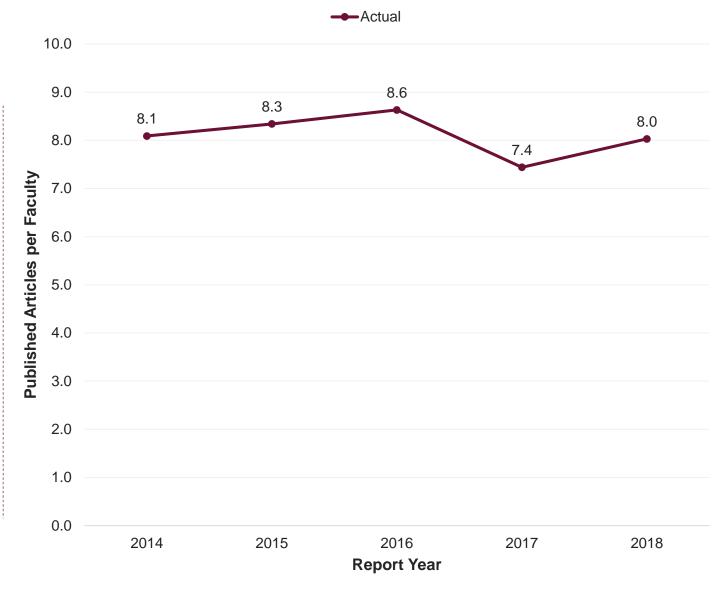
KPI Definition:

Published articles per faculty based on article counts and faculty counts in the Academic Analytics database.

Notes:

Virginia Tech's percentile placement among the subgroup of all public, Carnegie Class - Very High Research universities has been as follows:

2014	2015	2016	2017	2018
60th	58th	59th	55th	32nd

Key Performance Indicator (KPI):

Internationally and Nationally Recognized Faculty Citations

Milestone:

Top 1/3rd (66th percentile) by 2022
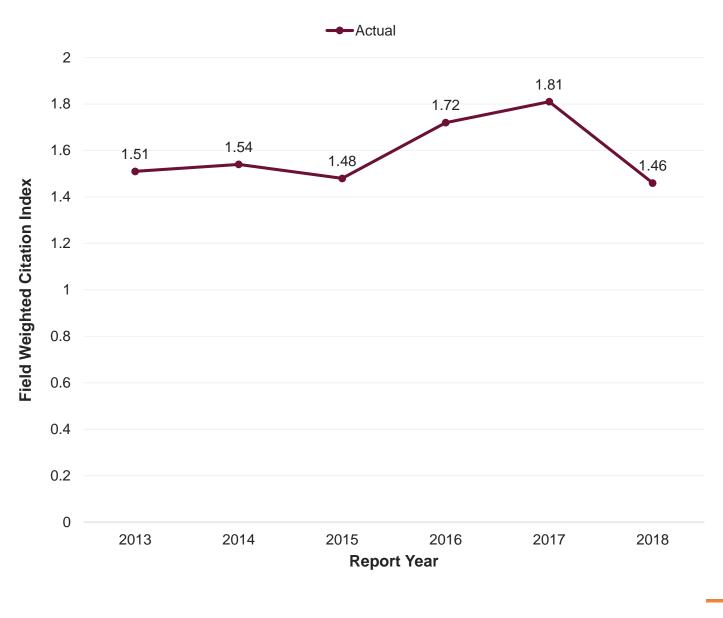
KPI Definition:

Field-Weighted Citation Index (FWCI) indicates how the number of citations received by the university's publications compares with the average number of citations received by all other similar publications at other universities, indexed in the Scopus database. An FWCI of greater than 1.00 indicates that the publications have been cited more than would be expected based on the world average for similar publications.

Notes:

Virginia Tech's percentile placement among the subgroup of all public, Carnegie Class - Very High Research universities has been as follows:

2013	2014	2015	2016	2017	2018
At 33rd	Below 33rd	Below 33rd	Between 33rd and 66th	Above 66th	Below 33rd

Advance Regional, National, and Global Impact

Key Performance Indicator (KPI):

Underrepresented Minority Students

Milestone:
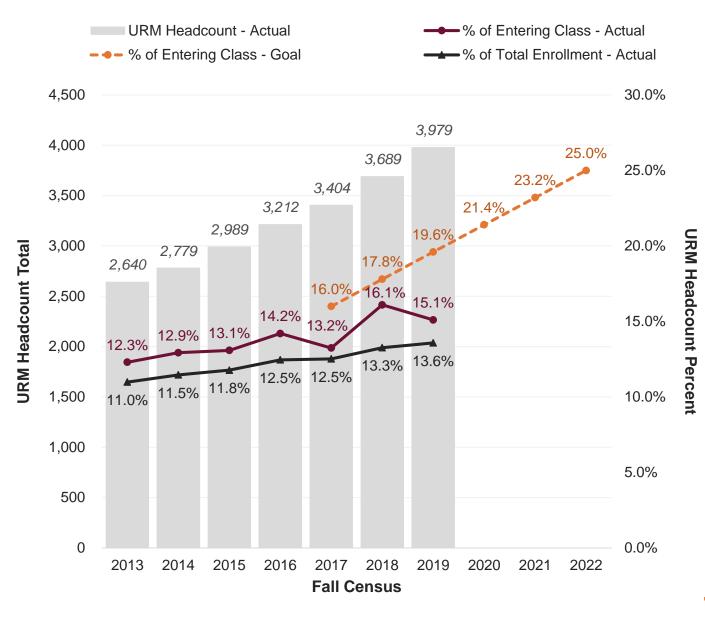
25% representation in the entering class by 2022

KPI Definition:

The number of entering students (first year and transfer) who self-identify as one of the underrepresented race/ethnicity categories of Hispanics of any race, Black or African American, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, or Two or More Races other than White + Asian divided by the total number of entering students.

Notes:

Although the number of entering underrepresented minority students increased by 12.6% between Fall 2018 (1,092 students) and Fall 2019 (1,230 students), the overall entering class increased at a higher rate (20%) over the same period.

Elevate the Ut Prosim Difference

Key Performance Indicator (KPI):

Underrepresented Minority or Underserved Students

Milestone:
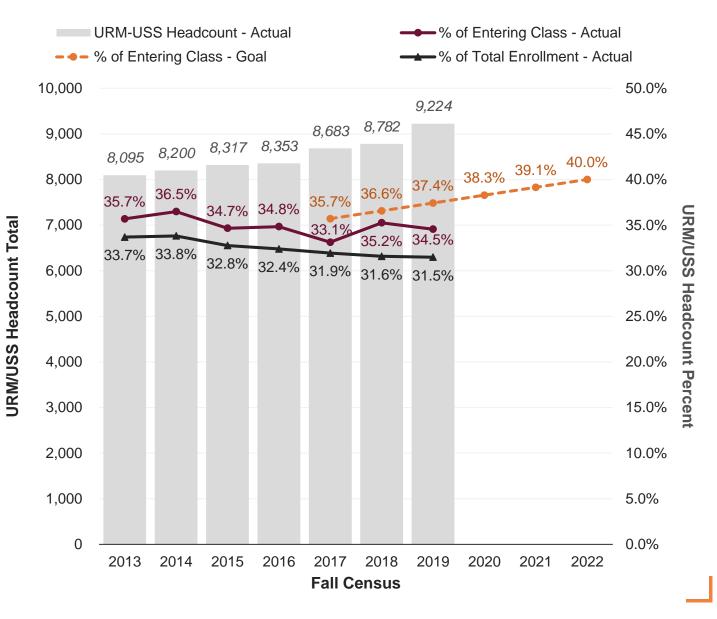
40% representation in the entering class by 2022

KPI Definition:

The number of entering students (first year and transfer) who self-identify as one of the underrepresented race/ethnicity categories of Hispanics of any race, Black or African American, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, or Two or More Races other than White + Asian OR are first-generation student, Pell Grant eligible, or a Veteran, divided by the total number of entering students.

Notes:

Although the number of entering underrepresented minority students or underserved students increased by 17.7% between Fall 2018 (2,391 students) and Fall 2019 (2,814 students), the overall entering class increased at a higher rate (20%) over the same period.

Legend:
- URM-USS Headcount - Actual
- % of Entering Class - Actual
- % of Entering Class - Goal
- % of Total Enrollment - Actual

Chart data:

URM-USS Headcount - Actual:
- 2013: 8,095
- 2014: 8,200
- 2015: 8,317
- 2016: 8,353
- 2017: 8,683
- 2018: 8,782
- 2019: 9,224

% of Entering Class - Actual:
- 2013: 35.7%
- 2014: 36.5%
- 2015: 34.7%
- 2016: 34.8%
- 2017: 33.1%
- 2018: 35.2%
- 2019: 34.5%

% of Entering Class - Goal:
- 2017: 35.7%
- 2018: 36.6%
- 2019: 37.4%
- 2020: 38.3%
- 2021: 39.1%
- 2022: 40.0%

% of Total Enrollment - Actual:
- 2013: 33.7%
- 2014: 33.8%
- 2015: 32.8%
- 2016: 32.4%
- 2017: 31.9%
- 2018: 31.6%
- 2019: 31.5%

Y-axis left: URM/USS Headcount Total
Y-axis right: URM/USS Headcount Percent
X-axis: Fall Census

Elevate the Ut Prosim Difference

Key Performance Indicator (KPI):

Underrepresented Minority Graduate and Professional Students

Milestone:

20% representation by 2024

KPI Definition:

The number of graduate and professional students who self-identify as one of the underrepresented race/ethnicity categories of Hispanics of any race, Black or African American, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, or Two or More Races other than White + Asian divided by the total number of graduate and professional students.

Master's/PhD - Actual
Professional - Actual
Master's/PhD - Goal
Professional - Goal

Graduate Student URM %

25.0%
20.0%
15.0%
10.0%
5.0%
0.0%

13.2% 14.2% 14.5% 15.1% 15.3% 16.8% 16.7%
6.5% 8.2% 8.7% 10.0% 11.4% 10.9% 14.6%
16.0% 17.3% 18.0% 18.7% 19.3% 20.0%
12.5% 13.9% 15.0% 16.3% 17.6% 18.8%

Fall Census

2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Key Performance Indicator (KPI):
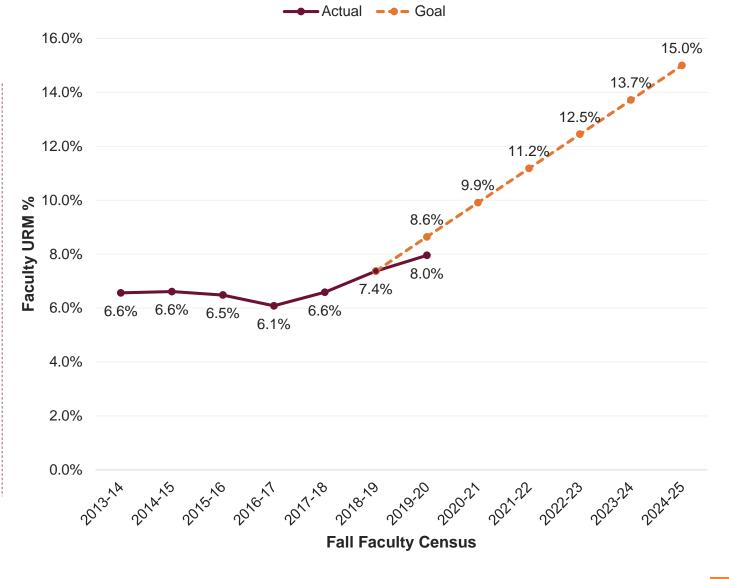
Underrepresented Minority Faculty

Milestone:

15% representation by 2024

KPI Definition:

The number of instructional and research faculty who self-identify as one of the URM race/ethnicity categories of Hispanics of any race, Black or African American, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, or Two or More Races other than White + Asian divided by the total number of instructional and research faculty.

Key Performance Indicator (KPI):
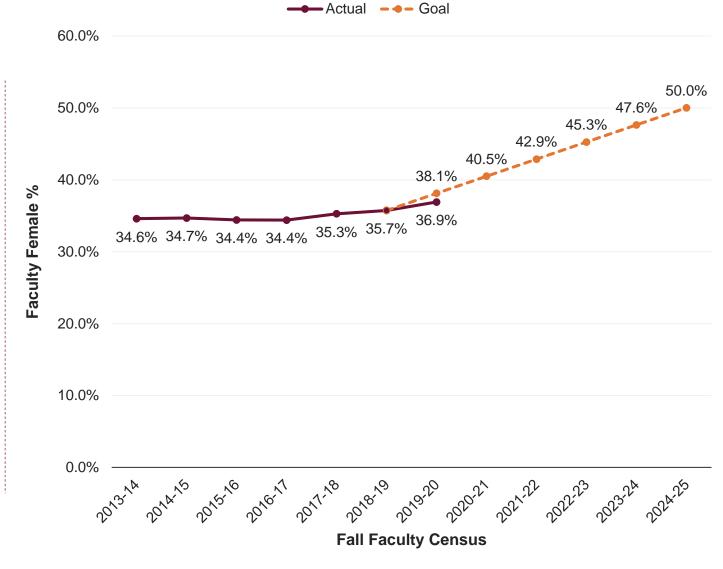
Female Faculty

Milestone:

50% representation by 2024

KPI Definition:

The number of instructional and research faculty who self-identify as female divided by the total number of instructional and research faculty.

Actual — **Goal**

60.0%	
50.0%	50.0%
	47.6%
	45.3%
40.0%	42.9%
	40.5%
38.1%	
34.6% 34.7% 34.4% 34.4% 35.3% 35.7% 36.9%	
30.0%	
20.0%	
10.0%	
0.0%	

Faculty Female %

2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23, 2023-24, 2024-25

Fall Faculty Census

Key Performance Indicator (KPI):

New Underrepresented Minority Faculty Hires

Milestone:
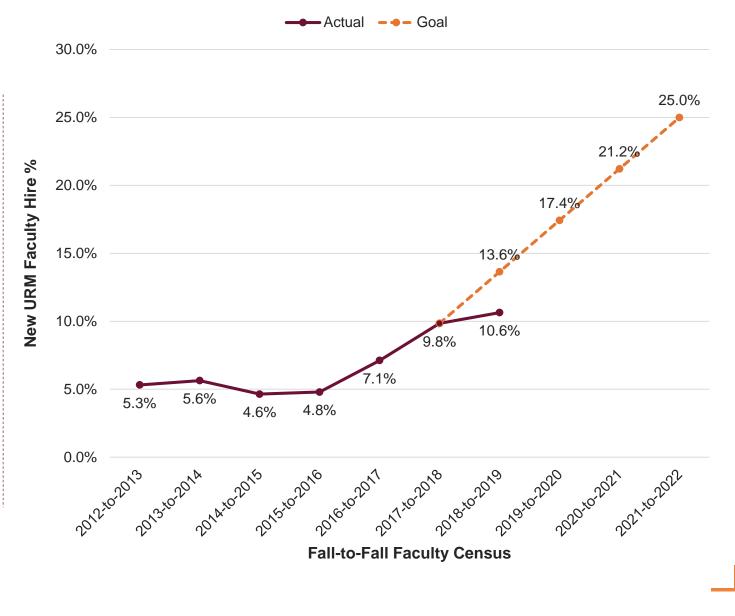
25% representation by 2022

KPI Definition:

The number of instructional and research faculty hired each year who self-identify as one of the minority race/ethnicity categories of Hispanics of any race, Black or African American, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, Asian, or Two or More Races other than White + Asian divided by the total number of instructional and research faculty hired each year. This includes new hires between October 1st of the previous calendar year and September 30th of the current calendar year.

Notes:

This metric excludes existing employees who transitioned into the instructional and research faculty ranks during the indicated time period.

Key Performance Indicator (KPI):

New Female Faculty Hires

Milestone:
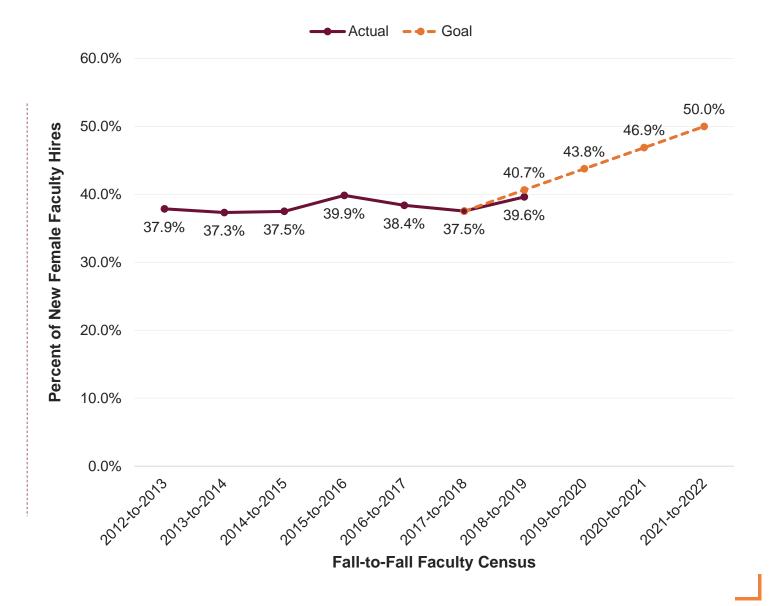
50% representation by 2022

KPI Definition:

The number of instructional and research faculty hired each year who self-identify as female divided by the total number of instructional and research faculty hired each year. This includes new hires between October 1st of the previous calendar year and September 30th of the current calendar year.

Notes:

This metric excludes existing employees who transitioned into the instructional and research faculty ranks during the indicated time period.

Key Performance Indicator (KPI):

Instructional Faculty Salaries

Milestone:
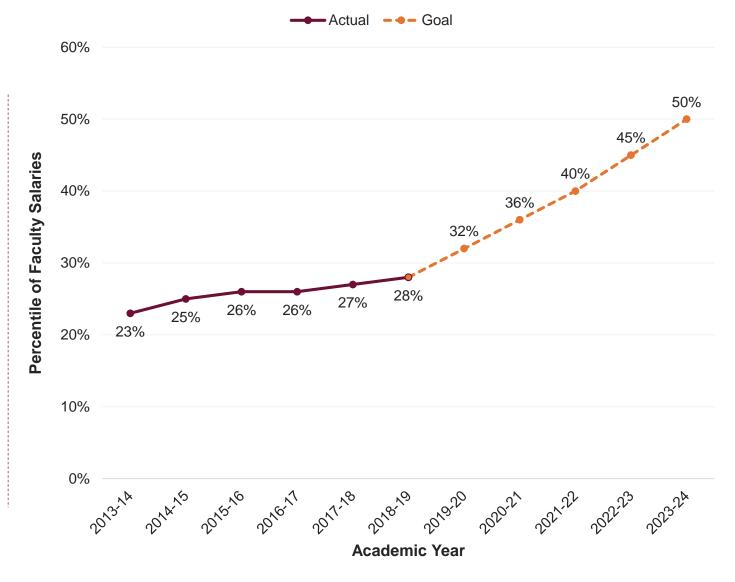
50th percentile of R1 public land-grants by 2024

KPI Definition:

The placement of Virginia Tech's average faculty salary (9-month equated, all instructional ranks as compiled by IPEDS) among the top 20 public, land-grant institutions as ranked in the WSJ/THE national ranking.

Notes:

Previously, this metric was benchmarked against SCHEV peers with the goal of the 60th percentile.

Be a Destination for Talent

Key Performance Indicator (KPI):
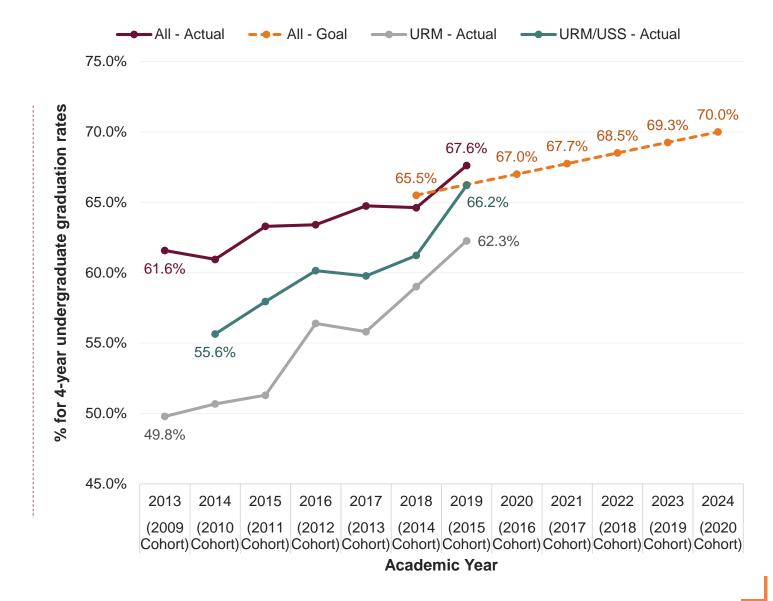
Four-Year Graduation Rates for Entering Freshmen

Milestone:

70% by 2024 (2020 cohort)

KPI Definition:

The number of first-year entering students who graduate within four years divided by the total number of entering students in the same entering class.

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Key Performance Indicator (KPI):

Three-Year Graduation Rates for Transfer Students

Milestone:

75% by 2024 (2021 cohort)

KPI Definition:

The number of entering transfer students who graduate within three years divided by the total number of entering transfer students in the same entering class.

Key Performance Indicator (KPI):

Auxiliary Maintenance Reserve Funding

Milestone:
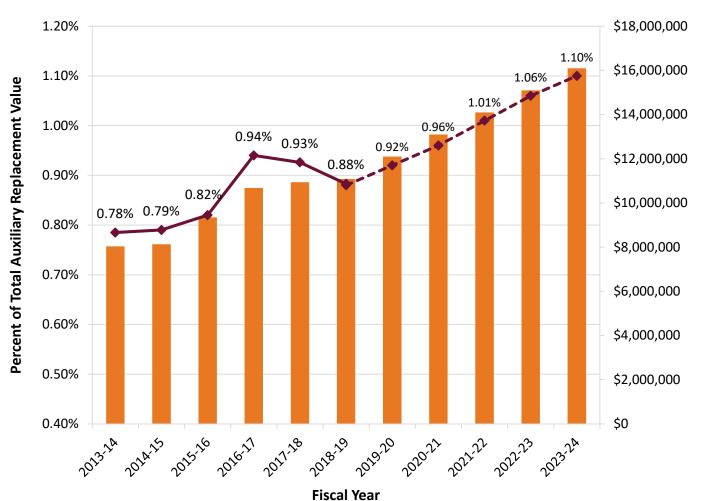
Maintain range of 1-1.5% of facility replacement value.

KPI Definition:

The annual Maintenance Reserve budget for the auxiliary enterprises divided by the auxiliary enterprises' facility replacement values.

Notes:

The percentage drop in fiscal years 2018 and 2019 reflect significant asset additions that abruptly expanded the denominator of the KPI. The university has since modified its practice to smooth the introduction of new assets, which are included in the forward-looking projections.

Ensure Institutional Excellence

Key Performance Indicator (KPI):

University Debt Ratio

Milestone:
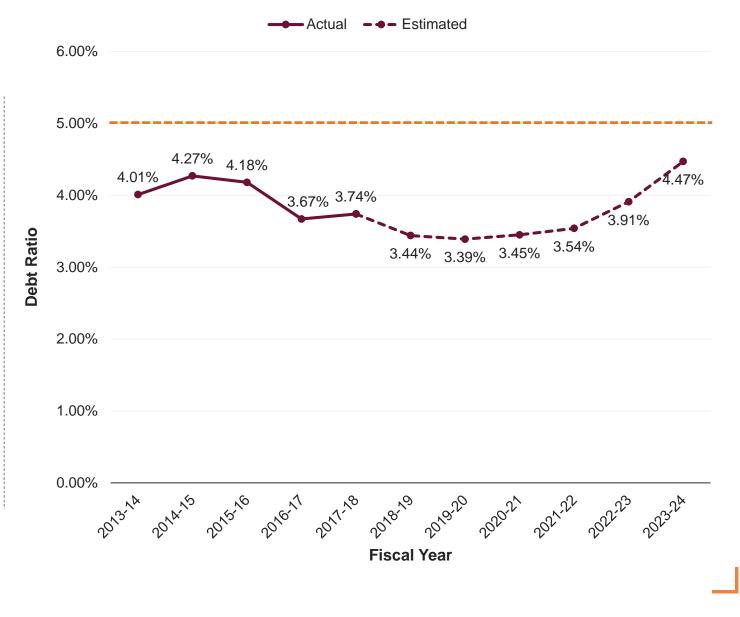
Less than or equal to 5%

KPI Definition:

The debt burden ratio is the annual debt service (principal plus interest) on long-term debt, excluding commercial paper or other bond anticipation notes, divided by total operating expenses. All amounts are from the audited financial statements and the related footnotes for each fiscal year. Debt service would also exclude all debt service payments for current refunded long-term debt, as well as all debt service payments on advanced refunded long-term debt that have been legally defeased. Additionally, it excludes other long-term obligations related to pensions, other post-retirement obligations, leases, etc.

Notes:

FY 2018-19 debt ratio is estimated, pending finalization of the university's financial statement.

Ensure Institutional Excellence

Key Performance Indicator (KPI):

University Unrestricted Net Assets

Milestone:

$20 million additional annually by FY2024

KPI Definition:

The change in unrestricted net assets is the net result of operations (revenues less expenses) for unrestricted funds. Major categories of unrestricted funds include Educational and General, auxiliary enterprises, and recovered facilities and administrative costs but excludes changes due to the implementation of new accounting requirements for net pension liability and obligations for other post employment benefits, and the change in obligations for leases. All amounts are from the audited financial statements and the related footnotes for each fiscal year.

Ensure Institutional Excellence

Key Performance Indicator (KPI):
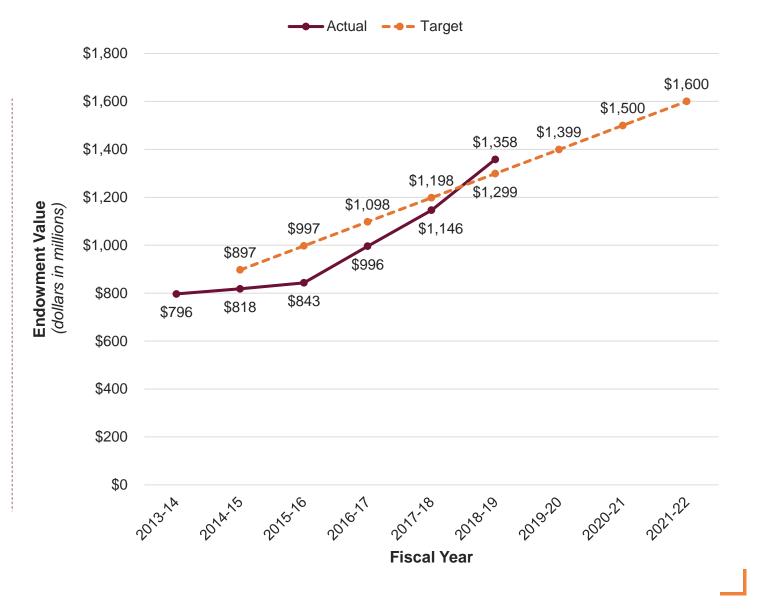
Endowment

Milestone:

$1.6 billion by FY2022

KPI Definition:

The endowment total consists of the Virginia Tech Foundation's consolidated endowment fund plus internal foundation assets that are earmarked for the endowment, but not yet received or liquidated. These include contributions receivable, notes, deeds of trust, gift annuities, real estate partnerships, and other miscellaneous endowed assets.

Ensure Institutional Excellence

Key Performance Indicator (KPI):

Alumni Giving

Milestone:
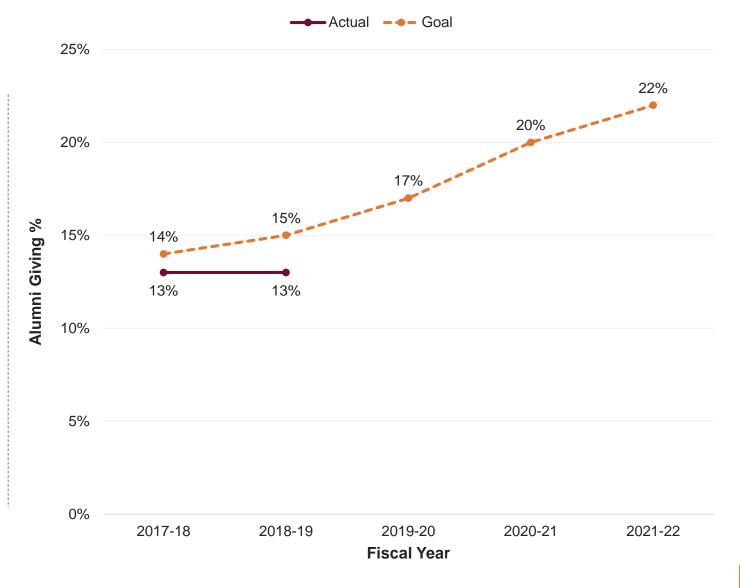
22% by FY2022

KPI Definition:

The percentage of undergraduate degree holding alumni who give a gift in the fiscal year.

Notes:

Between FY 2017-18 and 2018-19, the number of alumni donors increased by 5%; however, the number of living alumni continues to grow each year. For FY18, Virginia Tech ranked 9th in the country for donor growth, while two-thirds of institutions saw a decrease in donor counts. The stated goal has been to grow alumni participation from 9% to 22% by 2022.

Ensure Institutional Excellence

Key Performance Indicator (KPI):

New Gifts and Commitments

Milestone:
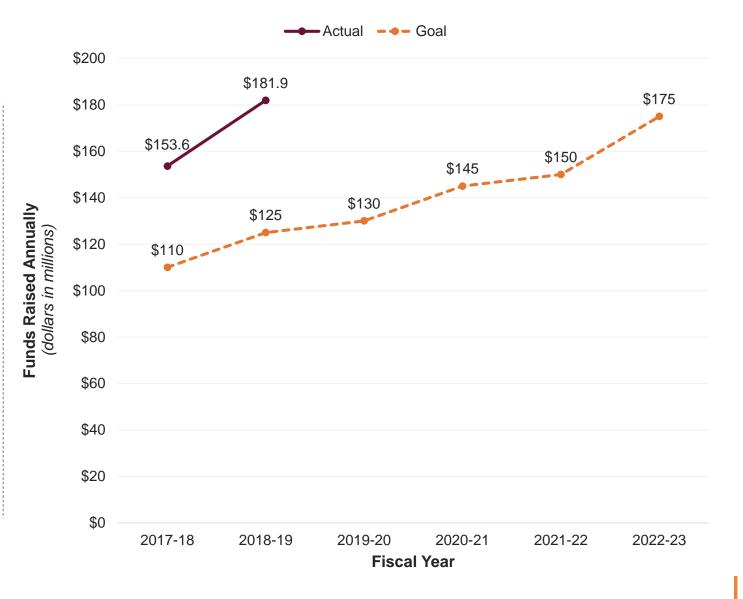
$175 million by FY2023

KPI Definition:

Yearly new gifts and commitments - the total amount of new pledges and outright gifts recorded within the fiscal year.

Notes:

While new gifts and commitments were not tracked prior to FY16, new gifts and commitments were approximately $80M prior to FY16.

Ensure Institutional Excellence

Metrics Still Under Construction

- Academic Majors with an Experiential Learning Component

- Graduate Programs with Required Cultural Competency Component

- Undergraduate Students Graduating with Two or More Critical Analysis of Equity and Identity Pathways Courses

- Undergraduate Students Graduating with Two or More Intercultural and Global Awareness Pathways Courses

- Student Participation in Hokie Mentorship Connect Program

- College and Unit-Level Strategic Plans

Metrics Under Review

- Rural Virginia Initiative

- Administrative & Professional Faculty and Staff Salaries

- Average Student Loan Debt Per Graduating Senior

- Faculty and Staff Satisfaction with Career Advancement Opportunities

- Faculty and Staff Satisfaction with Work-Life Balance

- Underrepresented Minority Staff and Administrative & Professional Faculty

- Number of Invention Disclosure Forms (IDFs)

- Number of Licenses

- Number of Start-ups

Additional Supporting Measures

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Key Performance Indicator (KPI):

Wall Street Journal/Times Higher Education (WSJ/THE) US College Rankings

Milestone:

Top 10 U.S. public land-grant by 2024

KPI Definition:
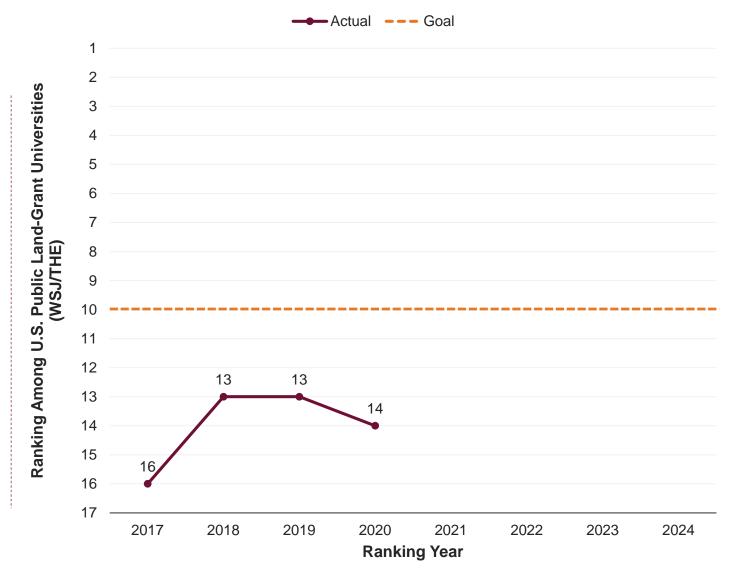
The placement of Virginia Tech by the WSJ/THE national ranking within the subgroup of all public, Carnegie Class - Very High Research, land-grant universities.

Notes:

In the 2020 WSJ/THE US College Rankings, Virginia Tech ranks 105 amongst 800 ranked universities. Virginia Tech's historical rankings among all universities are as follows:

2017	2018	2019	2020
134	123	106	105

Key Performance Indicator (KPI):
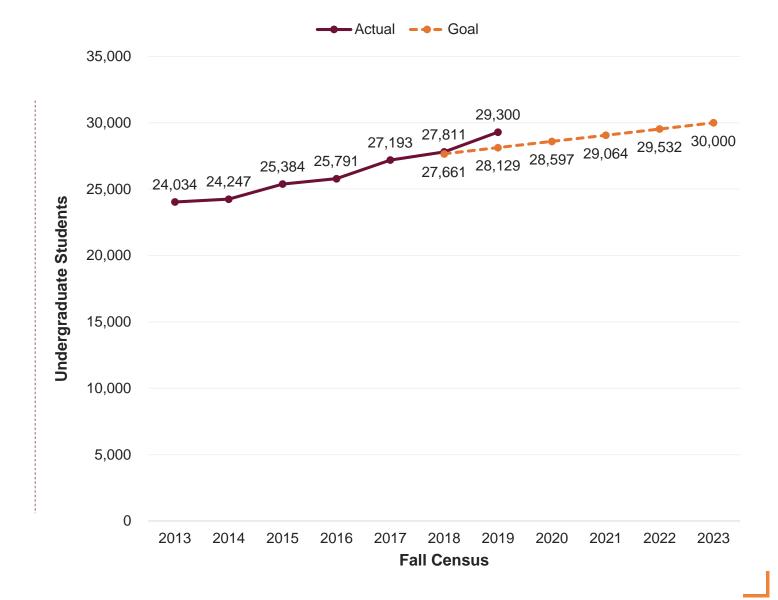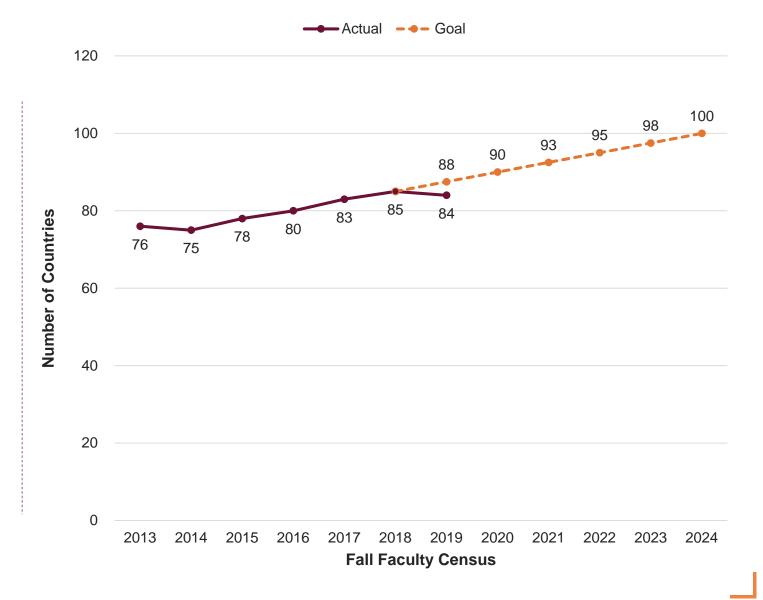
Countries Represented by International Faculty

Milestone:

100 countries by 2024

KPI Definition:

The number of countries represented by all faculty who are classified as foreign nationals who are not United States citizens.

Advance Regional, National, and Global Impact

Key Performance Indicator (KPI):

International Student Representation

Milestone:
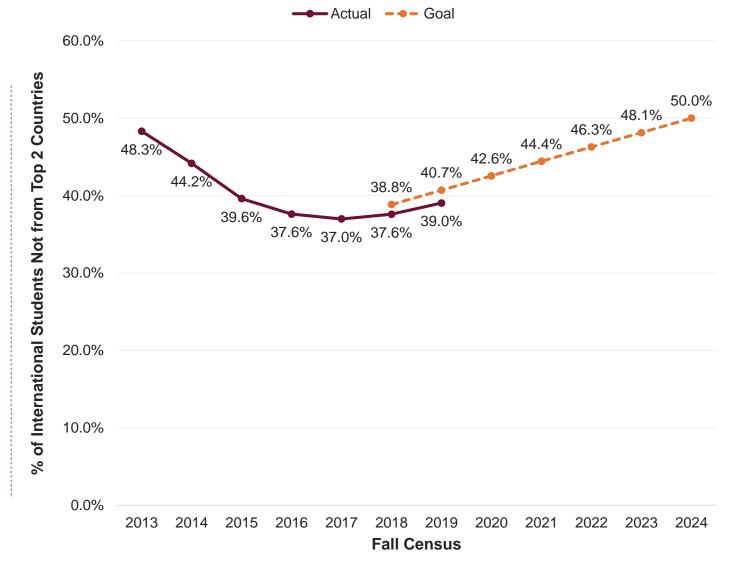
50% representation from countries outside of the top 2 countries by 2024

KPI Definition:

The total number of students who are foreign nationals with citizenship outside of the top two foreign countries divided by the total number of students who are foreign nationals.

Notes:

The top 2 countries for Virginia Tech's international students are China and India. Between Fall 2013 and Fall 2019, enrollment from Chinese citizens increased 60.4% (or, 645 students) and enrollment from Indian citizens increased by 84.4% (or 341 students). Enrollments from all other foreign countries combined increased by 14.4% (or 198 students).
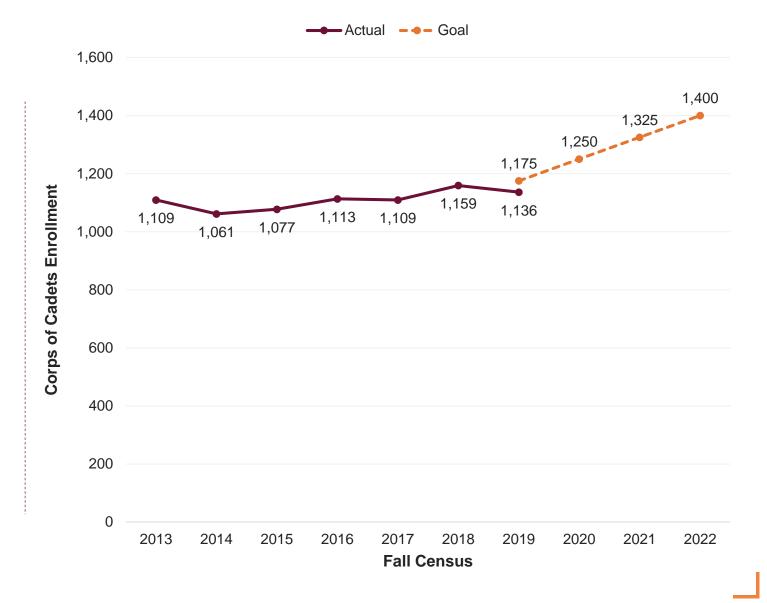
Key Performance Indicator (KPI):

Corps of Cadets Enrollment

Milestone:

1,400 by 2022

KPI Definition:

The number of students who are participants in the Virginia Tech Corps of Cadets.

Legend: Actual, Goal

Corps of Cadets Enrollment (y-axis), Fall Census (x-axis)

Actual values:
- 2013: 1,109
- 2014: 1,061
- 2015: 1,077
- 2016: 1,113
- 2017: 1,109
- 2018: 1,159
- 2019: 1,136

Goal values:
- 2019: 1,175
- 2020: 1,250
- 2021: 1,325
- 2022: 1,400

Key Performance Indicator (KPI):
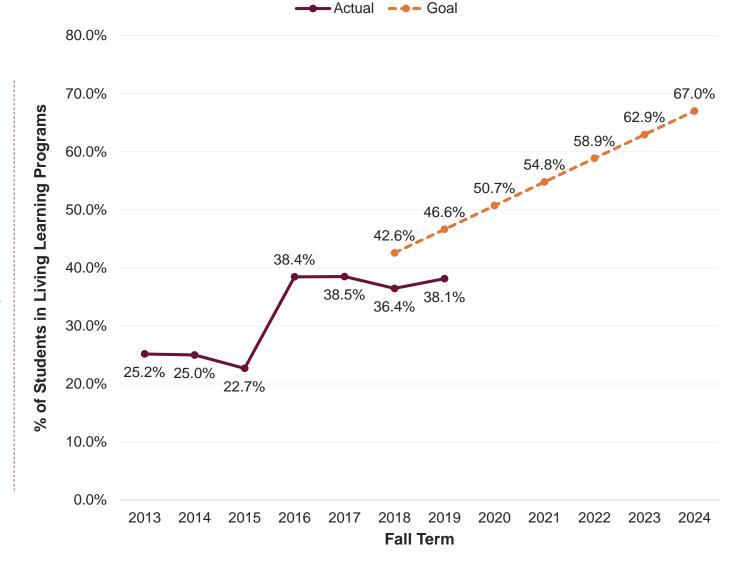
Students in Living Learning Programs

Milestone:

67% by 2024

KPI Definition:

The number of undergraduate students living in a Living Learning Community divided by the total number of undergraduate students living on-campus.

Be a Destination for Talent

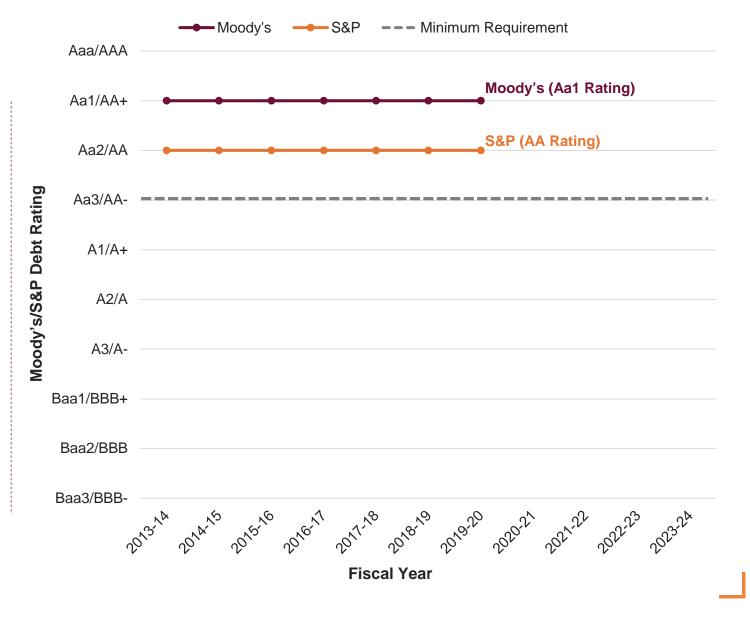*Key Performance Indicator (KPI):*

Debt Rating – Moody's and Standard & Poor's (S&P)

Milestone:

Maintain a rating in the AA range

KPI Definition:

The university's current debt ratings as provided by Moody's and Standard & Poor's.
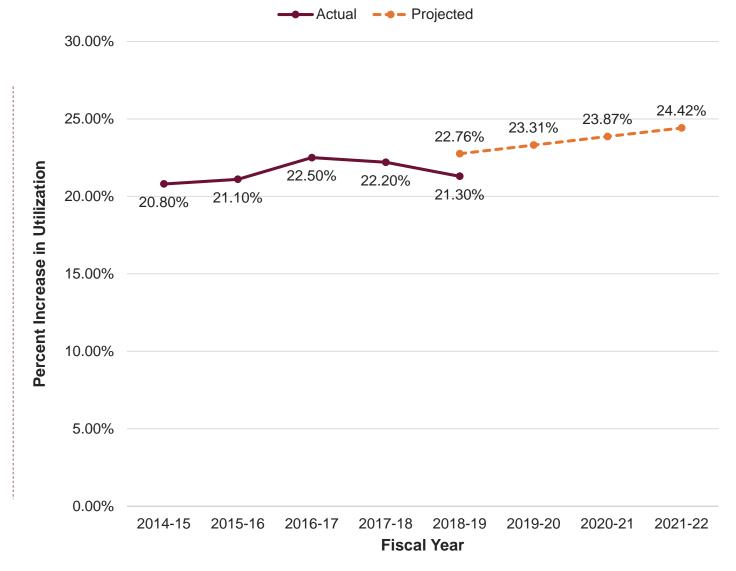
Key Performance Indicator (KPI):

SWaM Expenditures – Small Business

Milestone:

10% increase annually by FY22

KPI Definition:

SWAM expenditures are determined by the total expenditures with each category of Virginia Certified SWAM vendors divided by the university's total discretional spend. The State recognizes three categories of SWAM vendors currently: Small, Woman Owned and Minority Owned. A vendor must receive certification based on criteria established by the VA Small Business Supplier Development Agency. Each year, by category, a utilization percentage is calculated.
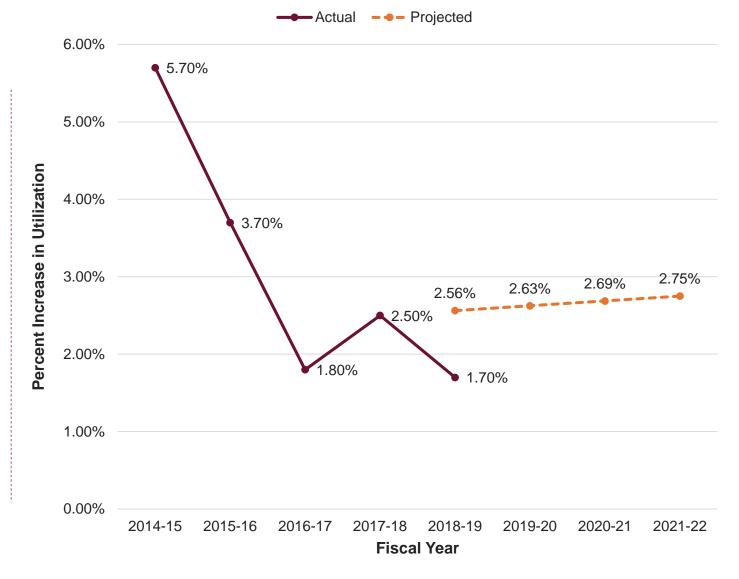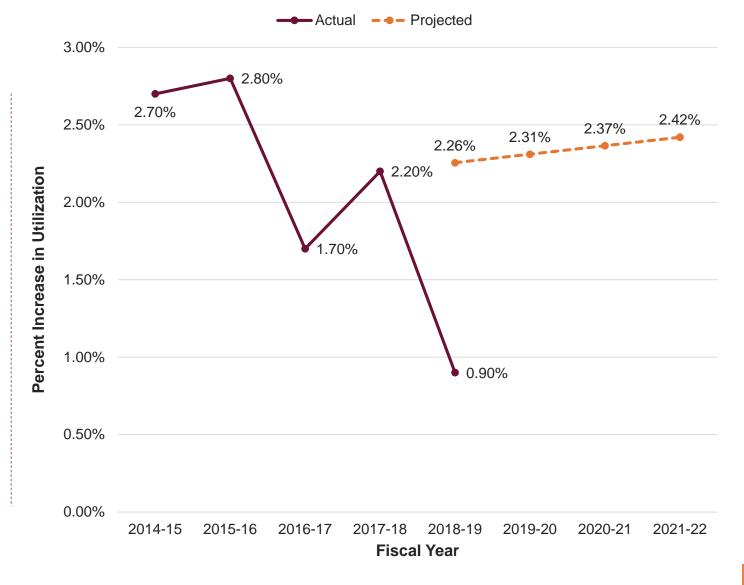
Key Performance Indicator (KPI):

SWaM Expenditures – Woman Owned

Milestone:

10% increase annually by FY22

KPI Definition:

SWAM expenditures are determined by the total expenditures with each category of Virginia Certified SWAM vendors divided by the university's total discretional spend. The State recognizes three categories of SWAM vendors currently: Small, Woman Owned and Minority Owned. A vendor must receive certification based on criteria established by the VA Small Business Supplier Development Agency. Each year, by category, a utilization percentage is calculated.

Ensure Institutional Excellence

Key Performance Indicator (KPI):

SWaM Expenditures – Minority Owned

Milestone:

10% increase annually by FY22

KPI Definition:

SWAM expenditures are determined by the total expenditures with each category of Virginia Certified SWAM vendors divided by the university's total discretional spend. The State recognizes three categories of SWAM vendors currently: Small, Woman Owned and Minority Owned. A vendor must receive certification based on criteria established by the VA Small Business Supplier Development Agency. Each year, by category, a utilization percentage is calculated.

Enrollment Update

LUISA M HAVENS GERARDO, PH.D.

VICE PROVOST FOR ENROLLMENT MANAGEMENT

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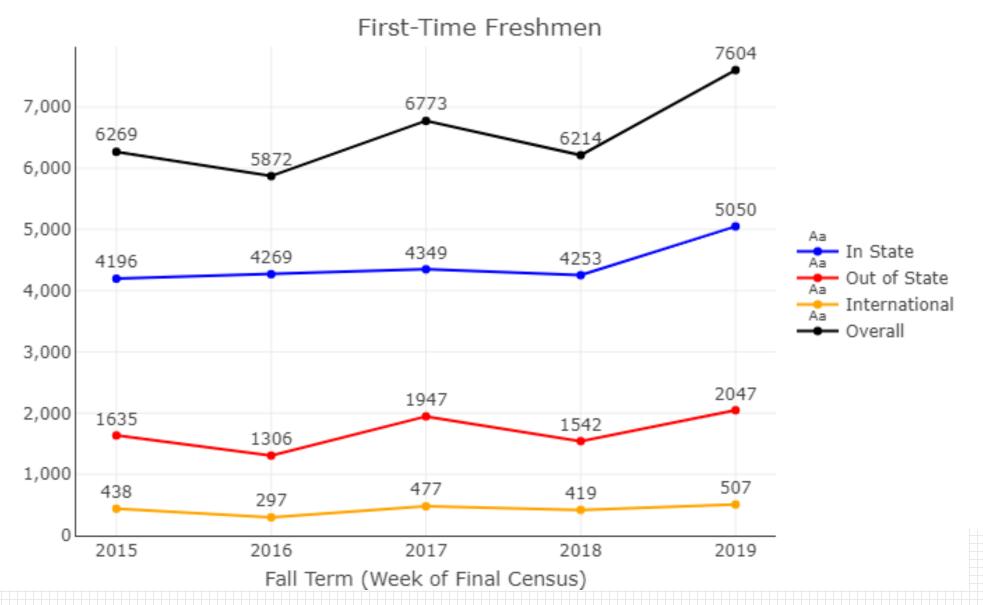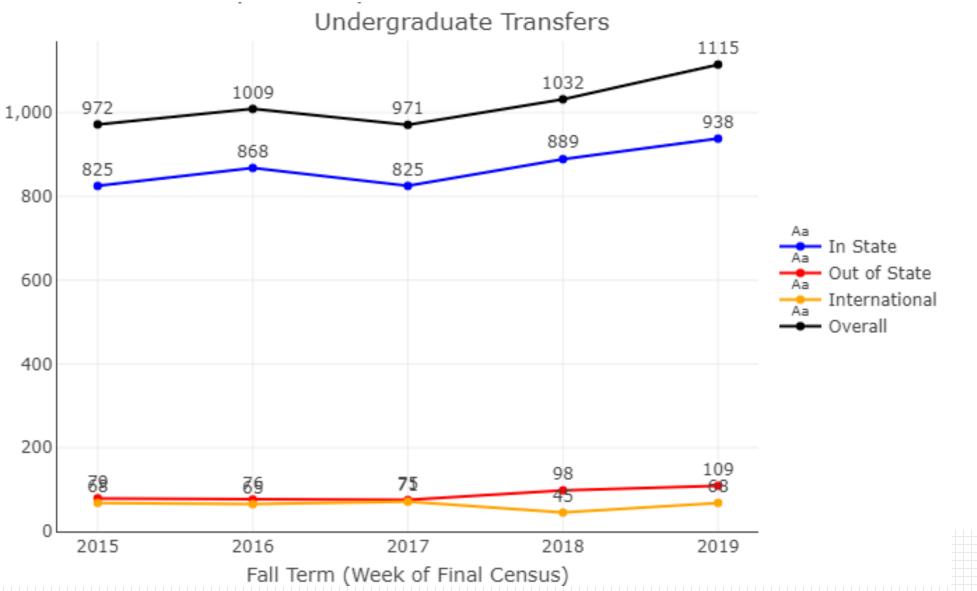# *Overall Enrollment – Targets vs Actuals*

	Target	Actual	Variance
Associate/Unclassified	219	216	(3)
New Freshman	6,600	7,604	1,004
New Transfers	1,250	1,116	(134)
Continuing UG	20,748	20,314	(434)
Off campus UG	50	50	-
Total Undergraduate	28,867	29,300	433
Graduate	4444	4382	(62)
Off campus GR	1926	2032	106
Total Graduate	6,370	6,414	44
Vet Med	498	499	1
VTCSOM	169	170	1
Total Enrollment-all-levels	35,904	36,383	479
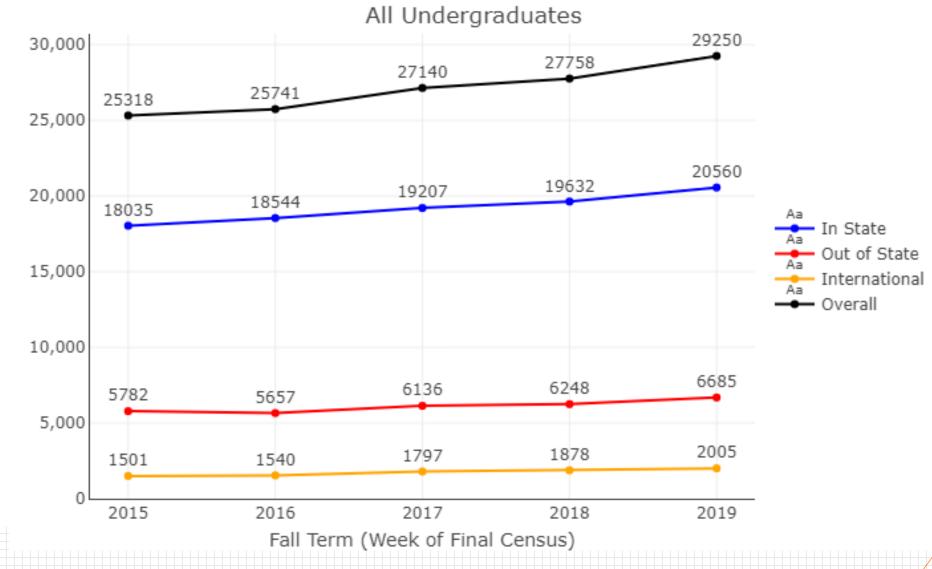
New Degree-Seeking Undergraduate Enrollment

First-Time Freshmen

Fall Term (Week of Final Census)

New Degree-Seeking Undergraduate Enrollment

Undergraduate Transfers

Total Undergraduate Enrollment- on-campus

All Undergraduates

Fall Term (Week of Final Census)

Legend:
- In State
- Out of State
- International
- Overall

Overall: 25318 (2015), 25741 (2016), 27140 (2017), 27758 (2018), 29250 (2019)

In State: 18035 (2015), 18544 (2016), 19207 (2017), 19632 (2018), 20560 (2019)

Out of State: 5782 (2015), 5657 (2016), 6136 (2017), 6248 (2018), 6685 (2019)

International: 1501 (2015), 1540 (2016), 1797 (2017), 1878 (2018), 2005 (2019)

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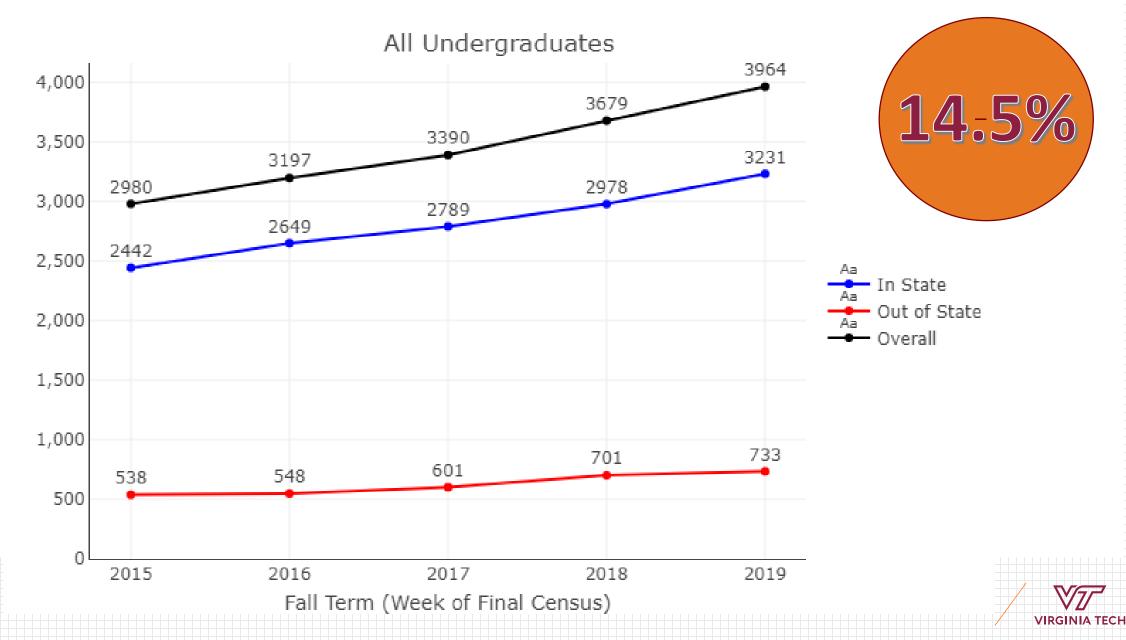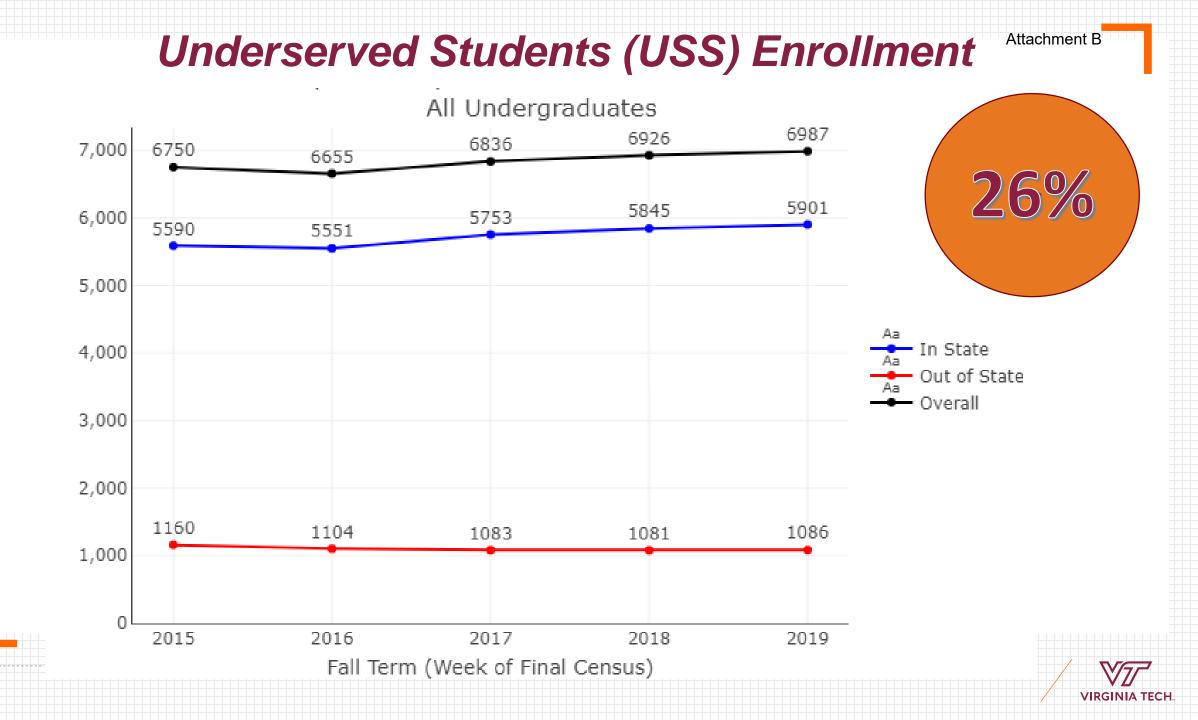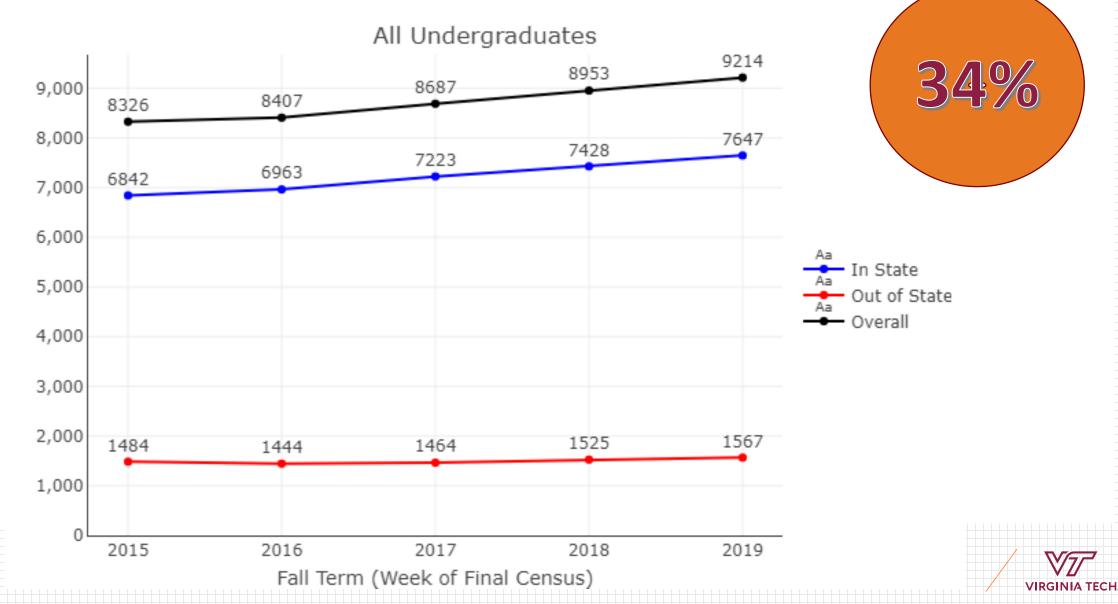
Underrepresented Minorities (URM) Enrollment

All Undergraduates

14.5%

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URM or USS Enrollment

All Undergraduates

34%

Virginia Tech
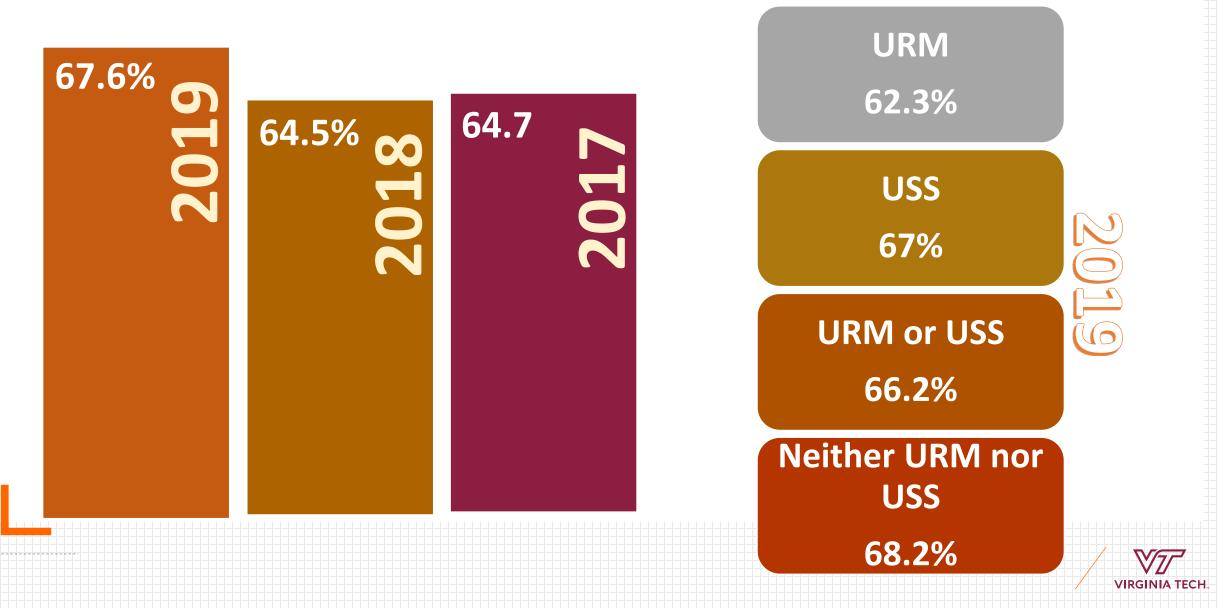
Undergraduate Graduation Trends

	17-18 graduates	Ratio	18-19 graduates	Ratio	N diff	% diff
OOS	1,487	26%	1,815	28%	328	22%
IS	4,266	74%	4,667	72%	401	9%
Total	5,753		6,482		729	13%

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Undergraduate Trends – 4-yr graduation rate

67.6% — 2019

64.5% — 2018

64.7 — 2017

URM 62.3%

USS 67%

URM or USS 66.2%

Neither URM nor USS 68.2%

2019

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Undergraduate Trends – 6-yr graduation rate

2019: 85.8%
2018: 83.7%
2017: 84.4

2019:
URM 78.1%
USS 82%
URM or USS 82%
Neither URM nor USS 87.5%

Undergraduate Trends – retention rate

	Overall	URM	USS	URM or USS	Neither URM/USS
Freshmen	92.6%	90.8%	89.3%	90%	93.8%
Diff from overall		-1.8	-3.3	-2.6	+1.2
Transfer	89.3%	88.6%	89.2%	89.8%	88.9%
Diff from overall		-0.7	-0.1	+0.5	-0.4

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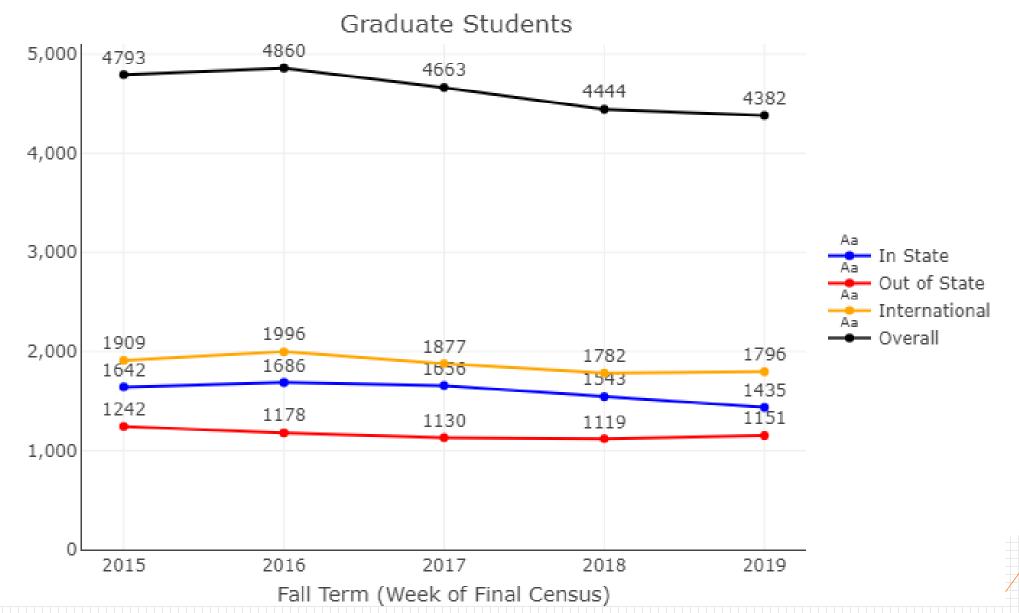
Undergraduate Trends – time to degree

	Overall	URM	USS	URM or USS	Neither URM/USS
Freshmen	4.02	4.12	4.09	4.1	3.99
Diff from overall		+0.10	+0.07	+0.08	-0.03
Transfer	2.86	2.89	2.96	2.95	2.77
Diff from overall		+0.03	+0.10	+0.09	-0.09
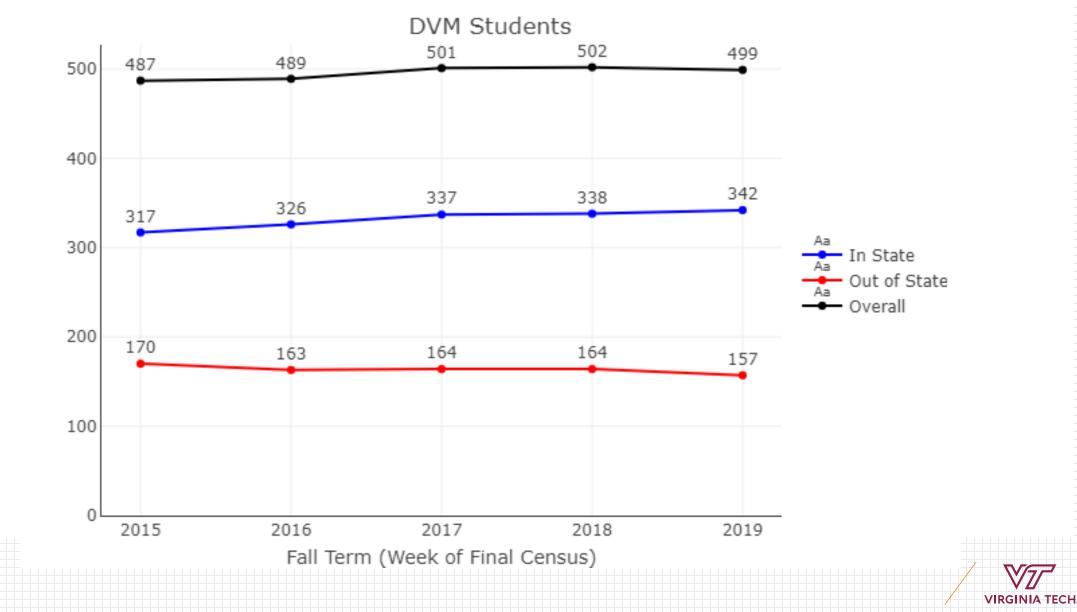
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Total Graduate Enrollment – on-campus

Graduate Students

Professional Enrollment

2020 Planning

- Predictive model for new students – 82% accuracy
- Forecast model for continuing students – 99% accuracy
- Initial planning meeting with each college to determine capacity for academic programs
- Housing/residence hall capacity provided by Student Affairs
- Currently vetting enrollment scenarios with budget office to finalize proposal to provost and president

VIRGINIA TECH

2020 Planning

As a result of a two-year investigation by the Antitrust Division of the US DOJ, the National Association for College Admission Counseling (NACAC) has changed the Code of Ethics and Professional Practice (CEPP). The following sections of the code no longer apply:

- Colleges **must not offer incentives** exclusive to students applying or admitted under an Early Decision application plan. Examples of incentives include the promise of special housing, enhanced financial aid packages, and special scholarships for Early Decision admits.

- Colleges **will not knowingly recruit or offer enrollment incentives** to students who are already enrolled, registered, have declared their intent, or submitted contractual deposits to other institutions. May 1 is the point at which commitments to enroll become final, and colleges must respect that.

- Colleges **must not solicit transfer applications from a previous year's applicant** or prospect pool unless the students have themselves initiated a transfer inquiry or the college has verified prior to contacting the students that they are either enrolled at a college that allows transfer recruitment from other colleges or are not currently enrolled in a college.

VT VIRGINIA TECH

discussion

VIRGINIA TECH

Highlights for BOV Meeting

Housing and Residence Life

- Campus occupancy fall at census is at 108.9% of standard occupancy campus-wide (civilian students at 110.3% occupancy and the Corps of Cadets at 106.1%).

- Civilian students are residing in overflow using hotels (475 students), converted lounges (179 students), RA roommates (158 students), and temporary triples (116 students). Cadets are using converted lounges (78 students), temporary triples/quads (15 students), and RA/Company Commander roommates (19).

- Nine additional resident advisor student staff and two additional residential learning coordinators (professional live-in staff) were hired to support hotel operations.

- Student Affairs facilities staff and summer student staff emptied, stored, and furnished the Inn at Virginia Tech and Holiday Inn. Furniture was ordered, received and staged in pods for installation as hotels became available.

- Ninety-seven returning students with housing contracts accepted a $5,000 incentive to cancel their housing. One-hundred thirty-four entering first-year students were granted an exemption to live off (71 were released for traditional reasons (local students, over 21, veterans, etc.), and 63 were released by the special exception.

Dining Services

- Virginia Tech's two food trucks have served 19,000 meals over the first 8 weeks of fall semester in the academic center of campus.

- We extended operations in most dining centers. For example, the extension of one additional hour of late night services in Hokie Grill Monday –Thursday nights has provided 5,204 meals over the first 32 nights of operation. During that additional hour, Hokie Grill averages 162 meals.

- A new "express lane" in Dietrick Hall (Grab and Go) has processed 15,400 student transactions in the first 8 weeks of the academic year.

- Dining Services is up over 108,005 transactions over during the first half of the semester, a 5.2% increase over last fall.

- Dining Services team has responded exceptionally well given to increased service hours. Response to date seems very positive with very little negative comments or feedback. We have had 2.2 million transactions this fall semester, averaging almost a quarter million a week.

Virginia Tech Principles of Community

November 17, 2019

HORACIO VALEIRAS

RECTOR

VIRGINIA TECH

Virginia Tech is a public land-grant university, committed to teaching and learning, research, and outreach to the Commonwealth of Virginia, the nation, and the world community. Learning from the experiences that shape Virginia Tech as an institution, we acknowledge those aspects of our legacy that reflected bias and exclusion. Therefore, we adopt and practice the following principles as fundamental to our on-going efforts to increase access and inclusion and to create a community that nurtures learning and growth for all of its members:

WE AFFIRM

- the inherent dignity and value of every person and strive to maintain a climate for work and learning based on mutual respect and understanding.

- the right of each person to express thoughts and opinions freely. We encourage open expression within a climate of civility, sensitivity, and mutual respect.

- the value of human diversity because it enriches our lives and the University. We acknowledge and respect our differences while affirming our common humanity.

VIRGINIA TECH.

WE REJECT

- all forms of prejudice and discrimination, including those based on age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, and veteran status. We take individual and collective responsibility for helping to eliminate bias and discrimination and for increasing our own understanding of these issues through education, training, and interaction with others.

VIRGINIA TECH.

WE PLEDGE

- our collective commitment to these principles in the spirit of the Virginia Tech motto of *Ut Prosim* (That I May Serve).

VIRGINIA TECH