University Council Minutes
November 2, 2020
3:30 PM
Videoconference

Present: Cyril Clarke (presiding), Laura Belmonte, Richard Blythe, Lance Collins, Karen DePauw, Bryan Garey, Guru Ghosh, Daniel Givens, Saied Mostaghimi for Alan Grant, Chris Kiwus, Lee Learman, Scott Midkiff, Ken Miller, Sally Morton, April Myers, Kelly Oaks, Kim O'Rourke, Julie Farmer for Charles Phlegar, Dwayne Pinkney, Menah Pratt-Clarke, Julia Ross, Frank Shushok, Robert Sumichrast, Tyler Walters, Lisa Wilkes, Paul Winistorfer, John Benner, Nick Copeland, Victoria Dashevsky, Paul Deck, Holli Drewry, Madlyn Frisard, Bob Hicok, Christa Miller, Diane Agud, Susan Anderson, James Hawdon, Cayce Myers, Robin Queen, David Bieri, Kevin Davy, Jia-Qiang He, Laszlo Horvath, Kathy Lu, Andre Meulenaer, David Tegarden, Megan Wawro, Judy Alford, Bruce Harper, Jenny McCoy, Brandy Morse, Sue Teel, Janice Austin, Karen Eley Sanders, Conaway Haskins, Inga Haugen, Sally Shupe, Awad Abdelhalim, Lia Kelinsky-Jones, Jack Leff, Miles Guth, Eric Kaufman, Anvitha Anumolu for Camellia Pastore, Tamarah Smith, and Sabrina Sturgeon

Absent with Notice: Timothy Sands

Absent: Michael Friedlander, Steve McKnight, Daniel Sui, Rajaram Bhagavathula, Serena Young, Masoud Agah, Eloise Coupey, Patricia Raun, Teresa Lyons, Amanda Coleman, and Reena Medavarapu

Guests: Nicole Akers, Lori Buchanan, Denny Cochrane, Kevin Edgar, Azim Eskandarian, Kari Evans, John Ferris, Kim Filer, Jack Finney, Debbie Greer, Trish Hammer, Dee Harris, Maruf Hoque, Bill Huckle, Nathan King, Ginny Pannabecker, Vickie Pitstick, Ellen Plummer, John Randolph, John Shewchuk, Rick Sparks, Rachel Specter, Jon Clark Teglas, Emily Vollmer, and Stacey Wilkerson

Dr. Clarke called the meeting to order at 3:30 p.m. A quorum was present.

1. Adoption of Agenda

A motion was made and seconded to adopt the agenda. The motion carried.

2. Announcement of approval and posting of minutes of October 19, 2020

Dr. Clarke noted that these minutes have been voted on electronically and can be publicly accessed on the Governance Information System on the Web (http://www.governance.vt.edu).

3. Old Business

Commission on Faculty Affairs
Resolution CFA 2020-21A
Resolution to Revise Faculty Handbook Promotion and Tenure Guidelines

This resolution has been deferred until the December 7, 2020, University Council meeting.

Commission on Faculty Affairs
Resolution CFA 2020-21B
Resolution to Revise Chapter 5 of the Faculty Handbook

Bob Hicok made a request to defer the second reading of this resolution until the December 7, 2020, meeting in order to allow more time for members to review the materials and consult with their constituent groups. There were no objections to the request, and the deferral was granted.

Commission on Undergraduate Studies and Policies
Resolution CUSP 2020-21A
Resolution to Approve New Major, Automotive Engineering, in Bachelor of Science in Mechanical Engineering

Paul Deck presented the resolution for second reading and made a motion to approve. The motion was seconded, and the motion passed.

Commission on Undergraduate Studies and Policies
Resolution CUSP 2020-21B
Resolution to Approve New Major, Robotics and Mechatronics, in Bachelor of Science in Mechanical Engineering

Paul Deck presented the resolution for second reading and made a motion to approve. The motion was seconded, and the motion passed.

Commission on University Support
Resolution CUS 2020-21A
Resolution to Approve the 2020 Climate Action Commitment

John Benner presented the resolution for second reading and made a motion to approve. The motion was seconded and the motion passed.

5. Announcement of Approval and Posting of Commission Minutes

These minutes have been voted on electronically and will be posted on the University web (http://www.governance.vt.edu). Note that the purpose of voting on Commission minutes is to accept them for filing. University Council Bylaws require that policy items be brought forward in resolution form for University Council action.

- Commission on Administrative and Professional Faculty Affairs
  September 9, 2020

- Commission on Faculty Affairs
  October 9, 2020

- Commission on Graduate and Professional Studies and Policies
  October 7, 2020

- Commission on Research
  September 17, 2020

- Commission on University Support
  September 17, 2020

6. For Information Only

The minutes of the University Advisory Council on Strategic Budgeting and Planning
October 15, 2020

7. Presentation

Kevin Edgar, Associate Dean of the Graduate School, gave a presentation on the conclusions of the 2019 Graduate Education Task Force (attached).

8. Presentation

John Ferris, Associate Professor, Mechanical Engineering and member of Faculty Senate; and Kimberly Filer, Director of the Center for Excellence in Teaching and Learning, gave a presentation on Experiential Learning (attached).

9. Adjournment-

There being no further business, a motion was made to adjourn the meeting at 5:00 p.m.

Name	Name of Member Representing	Do you approve the November 2 2020, University Council agenda?	Do you approve CUSP Resolution 2020-21A	Do you approve CUSP Resolution 2020-21B	Do you approve CUS Resolution 2020-21A
John Benner		Yes	Yes	Yes	Yes
Sally Shupe		Yes	Yes	Yes	Yes
Janice Austin		Yes	Yes	Yes	Yes
Frank Shushok		Yes	Yes	Yes	Yes
Andre Muelenaer		Yes	Yes	Yes	Yes
Lee Learman		Yes	Yes	Yes	Yes
Peizhen Lu		Yes	Yes	Yes	Yes
Kelly Oaks		Yes	Yes	Yes	Yes
Julie Ross		Yes	Yes	Yes	Yes
Kim O'Rourke		Yes	Yes	Yes	Yes
Bob Hicok		Yes	Yes	Yes	Yes
Karen DePauw		Yes	Yes	Yes	Yes
Diane Agud		Yes	Yes	Yes	Yes
Jack Leff		Yes	Yes	Yes	Yes
Robin Queen		Yes	Yes	Yes	Yes
Kevin Davy		Yes	Yes	Yes	Yes
Robert Sumichrast		Yes	Yes	Yes	Yes
Brandy Morse		Yes	Yes	Yes	Yes
Sue Teel		Yes	Yes	Yes	Yes
David Tegarden		Yes	Yes	Yes	Yes
Victoria Dashevsky		Yes	Yes	Yes	Yes
Karen Eley Sanders		Yes	Yes	Yes	Yes
Dwayne Pinkney		Yes	Yes	Yes	Yes
Inga Haugen		Yes	Yes	Yes	Yes
Lisa Wilkes		Yes	Yes	Yes	Yes
Bruce Harper		Yes	Yes	Yes	Yes
Julie Farmer	Charlie Phlegar	Yes	Yes	Yes	Yes
Madlyn Frisard		Yes	Yes	Yes	Yes
Megan Wawro		Yes	Yes	Yes	Yes

Miles Guth		Yes	Yes	Yes	Yes
Christa Miller		Yes	Yes	Yes	Yes
Susan Anderson		Yes	Yes	Yes	Yes
Lance Collins		Yes	Yes	Yes	Yes
Scott Midkiff		Yes	Yes	Yes	Yes
Sally Morton		Yes	Yes	Yes	Yes
Conaway Haskins		Yes	Yes	Yes	Yes
Judy Alford		Yes	Yes	Yes	Yes
Jenny McCoy		Yes	Yes	Yes	Yes
Velva Groover		Yes	Yes	Yes	Yes
Holli Drewry		Yes	Yes	Yes	Yes
Laszlo Horvath		Yes	Yes	Yes	Yes
Ken Miller		Yes	Yes	Yes	Yes
James Hawdon		Yes	Yes	Yes	Yes
Paul Deck		Yes	Yes	Yes	Yes
Tyler Walters		Yes	Yes	Yes	Yes
Nick Copeland		Yes	Yes	Yes	Yes
Lia Kelinsky-Jones		Yes	Yes	Yes	Yes
Menah Pratt-Clarke		Yes	Yes	Yes	Yes
Dan Givens		Yes	Yes	Yes	Yes
Bryan Garey		Yes	Yes	Yes	Yes
Paul Winistorfer		Yes	Yes	Yes	Yes
Guru Ghosh		Yes	Yes	Yes	Yes
David Bieri		Yes	Yes	Yes	Yes
Laura Belmonte		Yes	Yes	Yes	Yes
Richard Blythe		Yes	Yes	Yes	Yes
Cayce Myers		Yes	Yes	Yes	Yes
Chris Kiwus		Yes	Yes	Yes	Yes
Said Mostaghimi	Alan Grant	Yes	Yes	Yes	Yes
Awad Abdelhalim		Yes	Yes	Yes	Yes

Report of the Graduate Education Task Force

Kevin Edgar, Associate Dean,
The Graduate School

October 6, 2020

Members:
Rajesh Bagchi
Kevin Edgar (chair)
Dennis Dean
Jeff Earley
Tom Ewing
Samantha Fried
Glenda Gillaspy
Randy Heflin
Eric Kaufman
Kacy Lawrence
Margie Lee
Theresa Meyer
Nancy Ross
Neil Sedlak
Brennan Shepard
Cortney Steele
Kenneth Wong
G. Don Taylor

VIRGINIA TECH

Task force charge (by Provost Cyril Clarke, and VP & Dean Graduate Education Karen DePauw, late spring 2019)

- Full charge memo included in the report; in summary, evaluate grad ed at VT and recommend ways to track and improve

- Here is what we considered the most key sentence:

  "review our research-based graduate education programs and draft recommendations for further enhancement"

VIRGINIA TECH

We sought to answer two big questions

- How to help raise the stature of Virginia Tech by raising the profile, impact, magnitude, and stature of VT graduate research and education?
- How can we raise the quality of graduate education at Virginia Tech and improve the experience of VT graduate students?

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We focused on comparing VT vs. "aspirational peers"

	University	2020 Ranking*
1	U. Cal. - Berkeley	13
2	Cornell U. (NY)	19
3	U. Illinois	48
4	U. Wisconsin	51
5	U. Cal. - Davis	55
6	Ohio St. U.	70
7	Penn. St. U.	78
8	U. Minnesota	79
9	Michigan St. U.	84
10	Purdue U. (IN)	88
11	U. Maryland	91
12	U. Arizona	104
13	Rutgers U.	168
14	U. of Florida	175
15	Texas A&M U.	178
16	Virginia Tech	201-250
17	NCSU	301-350

*Times Higher Education (**THE) World University Rankings, 2020**; #Center for Measuring University Performance, 2017 Data.
**US Census 2018 estimates; ##Federal Reserve Economic Data (FRED), 2018. Enrollment Data from IPEDS Fall 2017

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Grad Research/Teaching Strongly Influences University Rankings

Element	Component	%
Teaching (30%) (learning environment)	Reputation survey	15
	Staff-to-student ratio	4.5
	Doctorate-to-bachelors ratio	2.25
	Doctorates awarded/academic staff ratio	6
	Institutional income	2.25
Research (30%) (volume, income, reputation)	Reputational survey	18
	Research income	6
	Research productivity	6
Citations (30%) (research influence)		30
International Outlook (7.5%) (staff, students, research)	Proportion of international students	2.5
	Proportion of international staff	2.5
	International collaboration	2.5
Industry Income (2.5%) (knowledge transfer)		2.5

Components of THE Survey Analysis of University Rankings*
*https://www.timeshighereducation.com/world-university-rankings/world-university-rankings-2020-methodology

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Some aspirational peers with comparable resources among top 100

University	2020 Ranking*	State Pop. (M)**	State GDP (B $)##	Per Capita State GDP	Full Time UG	Total GS	Full Time GS
U. Cal. - Berkeley	13	39.6	2998	75707	29351	11317	9601
Cornell U. (NY)	19	19.5	1669	85590	14898	8109	8025
U. Illinois	48	12.7	865	68110	32613	14261	10237
U. Wisconsin	51	5.8	336	57931	28977	11619	9591
U. Cal. - Davis	55	39.6	2998	75707	29284	7314	6763
Ohio St. U.	70	11.7	676	57778	42003	13891	10054
Penn. St. U.	78	12.8	783	61172	39785	6284	5551
U. Minnesota	79	5.6	369	65893	29991	16415	9714
Michigan St. U.	84	10.0	527	52700	35404	11203	8103
Purdue U. (IN)	88	6.7	367	54776	30277	10567	6442
U. Maryland	91	6.0	412	68667	27708	10653	8107
U. Arizona	104	7.2	348	48333	29325	9650	7124
Rutgers U.	168	8.9	622	69888	33677	13936	8517
U. of Florida	175	21.3	1039	48779	31384	17422	12477
Texas A&M U.	178	28.7	1802	62787	46724	14864	11799
Virginia Tech	201-250	8.5	486	57176	26603	7247	4961
NCSU	301-350	10.4	564	54231	21384	10282	6031

*THE World University Rankings, 2020; #Center for Measuring University Performance, 2017 Data.
**US Census 2018 estimates; ##Federal Reserve Economic Data (FRED), 2018. Enrollment Data from IPEDS Fall 2017

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We tackled this complex task by constructing, testing hypotheses

Methodology:

Multiple external surveys, interviews, grad student forums, deep investigations of hypotheses, data gathering

Example Hypotheses:

- Our endowment is too small
  - Data: THE endowment data
  - Conclusion: **hypothesis confirmed** (2017 data: VT $996M, MSU $3075M, PSU $2119M, Purdue $2424M)
- VT supports fewer graduate students per research dollar (i.e., we are inefficient)
  - Data: THE data
  - Conclusion: **hypothesis refuted**

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Enhancing quality of graduate education at VT

Strengths to be preserved & enhanced include:

- Commitment to diversity
- Sense of community
- Interdisciplinary focus
- Professional development
- Transformative graduate education

Improvement recommendations from grad student panel discussions:

- Need to enhance mentorship of grad students by faculty supervisors
- Need for improved professional development
- Grad student housing in Blacksburg in particular is too often subpar and expensive; interest in VT exerting influence on landlords in partnership with the town

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Our students recommend that we have high aspirations:

Strengths to be preserved & enhanced include:

- Commitment to diversity
- Sense of community
- Interdisciplinary focus
- Professional development
- Transformative graduate education

Improvement recommendations from grad student panel discussions:

- Need to enhance mentorship of grad students by faculty supervisors
- Need for improved professional development
- Grad student housing in Blacksburg in particular is too often subpar and expensive; interest in VT exerting influence on landlords in partnership with the town

"I suggest that VT set goals that are aspirational; not settling for being equivalent to peer land grants, but competing with the most excellent land grant universities"; VT grad student

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Concerning level and trends for grad enrollment, external funding

- VT has full-time graduate student enrollment only 55% of average of aspirational peers
- VT external funding 47% lower than average of our aspirational peers ($297M vs. $564M)
- That may be overly optimistic; VT external funding has included major contributions from VTTI, Fralin BMI (whose focus is not entirely on graduate research), and Biocomplexity Institute
- Graduate enrollment, applications, and yield all trending downwards (see table); not true of most aspirational peers
- Land grant universities from states with comparable resources (GDP, per capita GDP, population) have much higher rankings (e.g. Penn St. (78), Michigan St. (84), Purdue (88))

Fall term	Applications	Offer rate	Enrolled	Yield
2010	10327	39%	2265	57%
2015	10135	41%	2306	56%
2019	7860	50%	2006	51%

(Full table in report)

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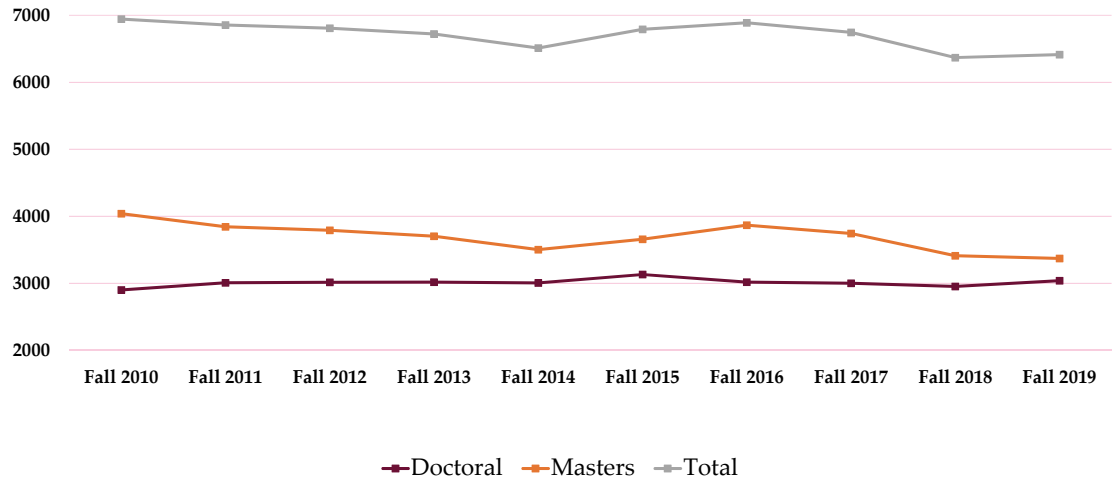
VT Graduate Enrollment Declining 2010-2019



- PhD enrollment steady, masters decline

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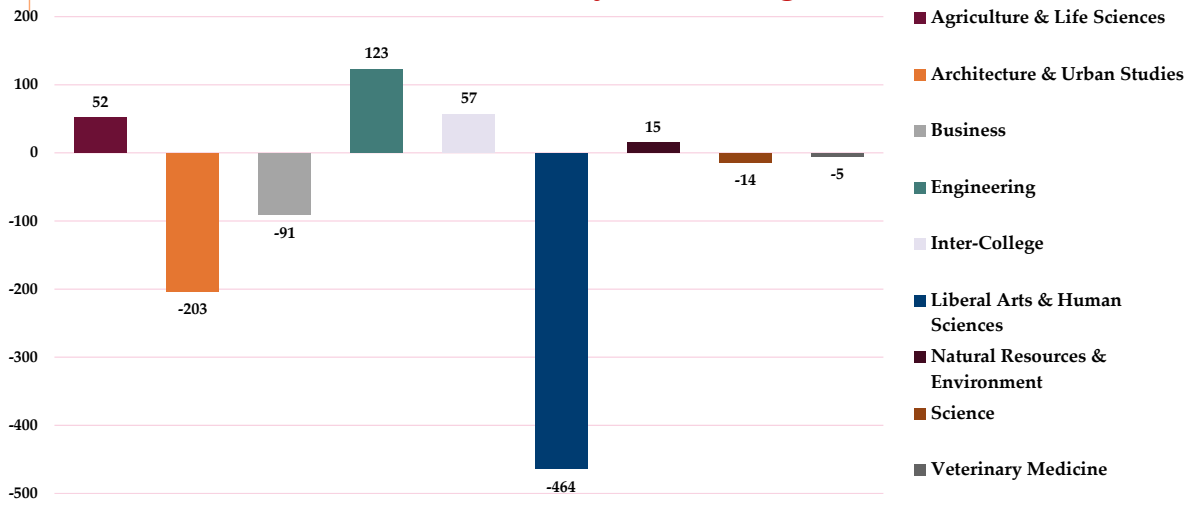
Grad Enrollment Trends by VT College 2010-19



- **Enrollment loss due largely to a few master's declines**
- Key masters issues; educational accreditation changes, elimination of Blacksburg MBA, some architecture issues

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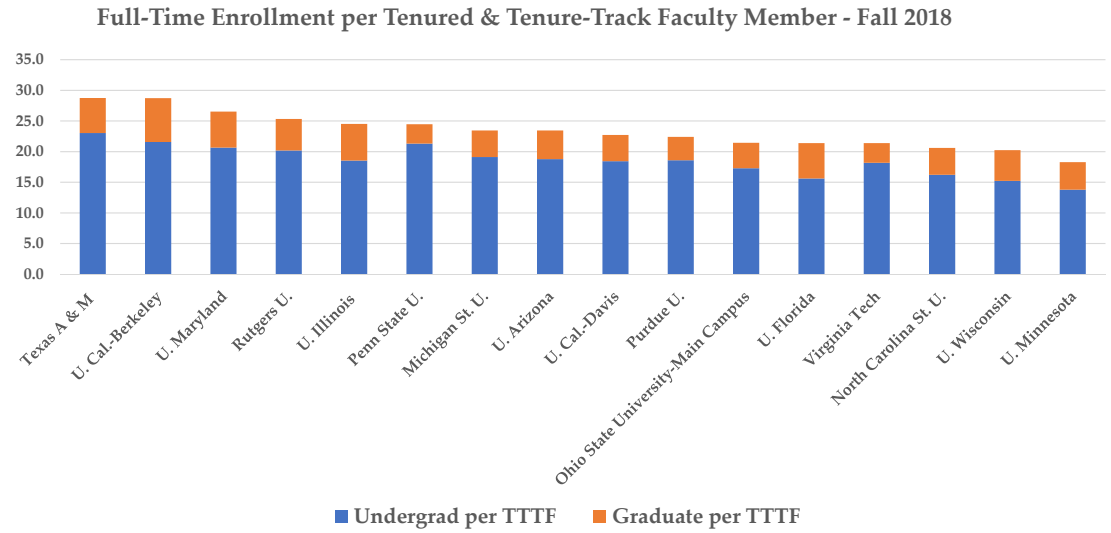
VT Grad Enrollment per TTF Relatively Low



- **VT grad enrollment lags vs. aspirational peers and**
- **VT grad enrollment/TTF near bottom of aspirational peers (3.2 vs. 4.9 ave.)**

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Make funding go further: Refined candidate status

Proposed refinements on candidate status to preserve benefits to students and programs but reduce cost :

- Original approved proposal
  - 3 yrs maximum
  - Eligible after preliminary exam
  - Cost $2.7M in tuition offset by $1.9M in sponsored programs, so max. -$0.8M
- **GETF proposes implementation of candidacy status as follows**:
  - Eligibility starts 1 yr past preliminary exam
  - Eligible for up to 2 yrs
  - Cost estimated at max. of -$330K
- Ease financial burden on students, make external funding go further
- Additional benefits; incentive for early prelim, reduced time to degree

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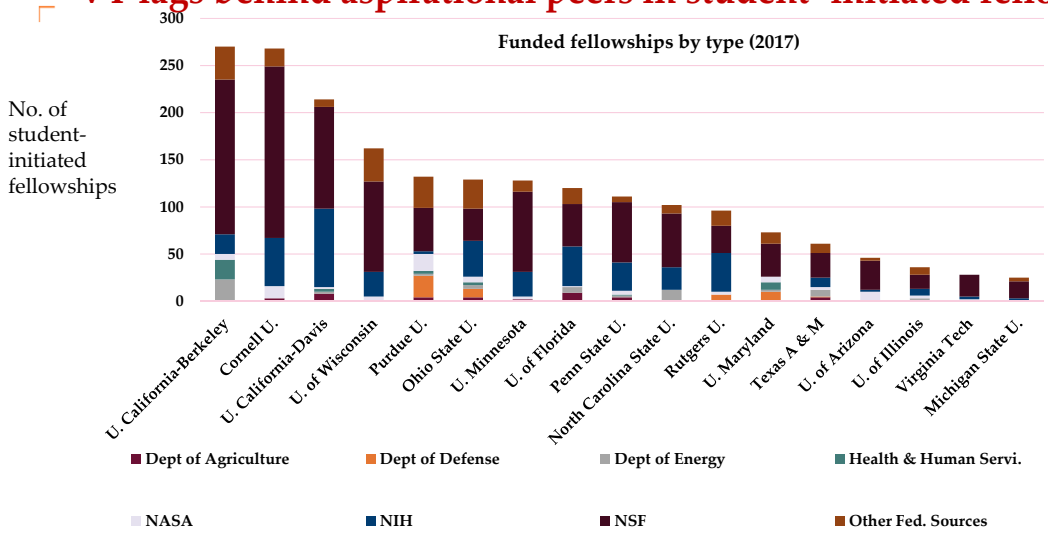
VT lags behind aspirational peers in student- initiated fellowships



- Trailing UC Davis by nearly 200, Purdue/PSU by ca. 100
- Peer universities provide much more support to student proposal writers
- Benefit of **expectation** that students/potential students apply

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VT lags in TTF Size, Research Expenditures, Expenditures/TTF

	Land Grant Univ.	THE Global Rank	Total Res. Exp. ($M)	External Res. Exp. ($M)	TTF	Ext. Research Exp. per TTF ($k)
1	U. of California, Berkeley	13	797	627	1361	461
2	Cornell U.	19	1072	797	1398	570
3	U. of Illinois	48	653	473	1762	268
4	U. of Wisconsin	51	1206	808	1924	419
5	U. of California, Davis	55	789	581	1508	385
6	Ohio St. Univ.	70	875	746	2455	303
7	Pennsylvania St. Univ.	78	908	712	1765	403
8	U. of Minnesota	79	955	650	2171	299
9	Michigan St. Univ.	84	715	427	1870	228
10	Purdue Univ.	88	632	380	1689	225
11	U. of Maryland	91	541	401	1410	284
12	U. of Arizona	104	687	473	1503	314
13	Rutgers U.	168	706	536	1794	298
14	U. of Florida	175	865	641	2451	261
15	Texas A&M	178	922	646	2015	320
16	**Virginia Tech**	**201-250**	**532**	**312**	**1482**	**210**
17	North Carolina St. U.	301-350	510	389	1375	282

- VT rank: total exp 16th; ext exp 17th; TTF 13th; ext exp/TTF 17th
- Also lagging in fellowships, traineeships, self-supported students

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GETF Recommendations (page 1)

1) Provide to graduate students resources to support enhanced numbers of student-initiated research proposals.
2) Make a focused effort to solicit donations for endowed graduate fellowships.
3) Increase the number and scope of self-funded graduate programs.
4) Implement modified version of Candidacy Status resolution passed by UC (spring 2019)
5) Expand mentorship training to include all new assistant professors.
6) Implement 360° feedback for tenure-track faculty (TTF).
7) Implement a Professional Development Graduate Certificate.

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GETF Recommendations (page 2)

8) Increase minimum assistantship stipend rate to match minimum rates of VT aspirational peers.
9) Annually compare graduate stipend rates to our peers, and create incentives for colleges to maintain competitive rates.
10) Develop standard phrasing to properly convey intentions to employ graduate students for multiple years.
11) Enhance OSP support to faculty preparing research funding proposals.
12) Co-locate OSP staff in colleges and enhance agency-specific expertise and relationships.
13) Adopt a hybrid model where the Graduate School assists departments and programs to improve graduate recruiting.
14) Enhance role of Grad School in graduate program review and evaluation for continuous improvement.

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Graduate Education Task Force Final Report

- THANK YOU to all participants; GETF members, our student panels, and our survey responders
- Thank you for your attention; any questions?

VIRGINIA TECH

VT endowment lower than many aspirational peers

	University	2020 Ranking*	Endowment (M $)#	State Pop. (M)**	State GDP (B $)##	Per Capita State GDP	Full Time UG	Total GS	Full Time GS
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*THE World University Rankings, 2020; #Center for Measuring University Performance, 2017 Data.
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Key hypotheses tested:

Hypothesis	Data Developed	Conclusion
Larger UG population helps	UG, grad enrollment data	Weakly supports
Stipend size matters	IPEDS, NSF, survey data	Supports
VT has lost paying students over last decade	Grad enrollment data	Supports (MS)
VT has lost students on assistantships	Grad enrollment data	Refutes
VT supports fewer GS per research dollar due to inefficiencies	THE data	Refutes
Lags in fellowships, self-supported students, traineeships	NSF data	Supports
Decline in education masters dominates declines in grad students over last decade	Grad enrollment data	Supports
Recruitment strategies ineffectual	Application data	Supports
Endowment too small	THE data	Supports
Success rate for grants too low	Land grant univ. data	Supports
Insufficient support for GS-initiated proposals	NSF data	Supports

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How peer institutions support student-initiated proposals

	Expect students to apply	Fellowship list	Fellowship preparation resources				Financial assistance		Perks
			Seminars/ workshops	Templates	Review mechanism	Resubmit assistance	Tuition / fees	Insurance	
UC Berkeley	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
U Minn	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Maryland	Yes	Yes	Yes	No	No	No	Yes	Yes	No
Purdue	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Illinois	No	Yes	Yes	No	Yes	No	No	No	No
Cornell	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Penn St.	No	Yes	Yes	No	Yes	No	Yes	Yes	No

- Support rather than disadvantage students with initiative to write proposals (e.g. NSF GFRP)
- Support available in some VT depts/colleges; collaborate with OSP to make available university-wide?
- **Expectation may have even more impact than increased funding**

VIRGINIA TECH

Concerning level and trends for grad enrollment, external funding

- VT has full-time graduate student enrollment only 55% of average of aspirational peers
- VT external funding 47% lower than average of our aspirational peers ($297M vs. $564M)
- That may be overly optimistic; VT external funding has included major contributions from VTTI, Fralin BMI (whose focus is not entirely on graduate research), and Biocomplexity Institute
- Graduate enrollment, applications, and yield all trending downwards (see table); not true of most aspirational peers
- Land grant universities from states with comparable resources (GDP, per capita GDP, population) have much higher rankings (e.g. Penn St. (78), Michigan St. (84), Purdue (88))

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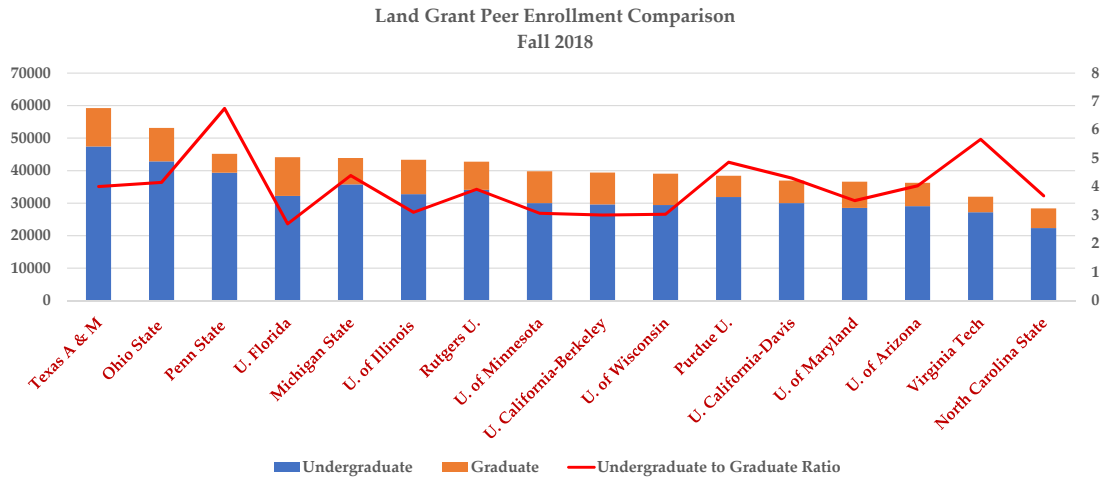
2015	10135	41%	2306	56%
2017	9411	41%	2050	53%
2018	8051	45%	1891	52%
2019	7860	50%	2006	51%

(Full table in report)

VIRGINIA TECH

Grad vs. UG Enrollment



- **VT:** among highest proportion of UGs, lowest number of grad students

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Potential impact of increased focus on endowed grad fellowships

- VT is 14th among the 17 (aspirational peers + VT + NCSU) in endowment (2017 data)
- Michigan St., Purdue, Penn St., Wisconsin, Minnesota among those with endowments more than $1B higher than VT's

Difference in endowment vs. VT:	**$1,000,000,000**
Annual interest generated*:	**$50,000,000**
Percentage allocated to graduate education:	**10%**
Amount allocated to graduate education:	**$5,000,000**
Assumed cost of a graduate fellowship:	**$50,000**
Increased number of grad fellowships available:	**100**

*Assumes 5% interest

VIRGINIA TECH

Task force charged (by Provost, VP & Dean Grad Ed) to address:

- Conduct a comparative analysis (relative to peer land grant universities) of:
  - Virginia Tech research-based graduate education programs, with particular attention to applications, admissions, enrollment, and student success outcomes (retention, time to candidacy status, time to degree completion);
  - the cost of research-based graduate education programs to students, Virginia Tech, and extramurally-funded grants and contracts; and
  - the national reputations of individual graduate degree programs.
- Recommend metrics, milestones to evaluate & track progress accomplished in grad program dev.
- Consider and, if appropriate, recommend policy revisions and other actions that will reduce the cost of graduate education and drive enrollment. Please note one such action related to differential tuition for students with candidate status has already received a supportive recommendation from University Council (Resolution CGSP 2018-19D).
- Consider, recommend policy revisions to stipulate importance of grad student mentorship for P&T.
- Consider, recommend strategies to incentivize faculty, acad. units to increase grad ed engagement
- Recommend other actions with potential to advance size & quality of research-based grad ed.

(lightly edited for length)

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VT makes less use of fellowships, traineeships, self-support as funding sources of doctoral students

Full-time Doctoral Students by Count, Primary Funding Mechanism, AY2016-17.

		Funding Mechanisms						
		Assistantships						
Land Grant U.	Count	Res.	Teaching	All	Fellowship	Trainee.	Self-support	Other
U. Cal., Berkeley	4154	34%	26%	84%	33%	1.7%	4.8%	0.1%
U. of Illinois	3809	42%	28%	70%	15%	0.1%	4.3%	10.9%
U. of Wisconsin	3723	46%	24%	69%	11%	6.9%	8.5%	4.3%
U. of Cal., Davis	3063	30%	36%	66%	26%	--	5.8%	2.5%
Ohio St. U.	3170	40%	30%	70%	16%	2.1%	4.2%	7.9%
Penn. St. U.	3067	51%	28%	79%	9%	0.8%	10.9%	0.3%
U. of Minnesota	3226	45%	30%	74%	15%	3.8%	5.3%	1.3%
Michigan St. U.	2211	51%	33%	84%	9%	1.6%	5.2%	0.6%
Purdue U.	3185	58%	28%	85%	9%	0.6%	4.7%	0.7%
U. Maryland	2854	39%	36%	75%	10%	0.9%	12.5%	1.9%
U. Arizona	1654	26%	27%	53%	3%	3.0%	24.1%	16.6%
Rutgers U.	1725	26%	39%	65%	15%	1.0%	15.4%	3.8%
U. Florida	3118	39%	23%	62%	15%	0.4%	20.8%	1.9%
Texas A&M	3655	44%	33%	77%	7%	0.5%	12.1%	3.6%
NCSU	2599	57%	27%	84%	9%	--	6.0%	0.4%
Peer Ave.	**3014**	**42%**	**29%**	**72%**	**14%**	**1.6%**	**8.9%**	**3.5%**
Virginia Tech	**2148**	**53%**	**35%**	**89%**	**2.4%**	**--**	**6.2%**	**2.7%**

- Source: NSF Survey of Graduate Students and Postdocs in Science & Engineering, AY 2017

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Membership of the GETF

Name	Affiliation	Role
Rajesh Bagchi	Dept. Head, Marketing, Pamplin Coll. Bus.	Member
Kevin Edgar	Assoc. Dean, Grad School	Chair
Dennis Dean	Director, Fralin Life Sci. Inst.	Member
Jeff Earley	Assoc. V.P., Finance	Member
Tom Ewing	Assoc. Dean, CLAHS	Member
Samantha Fried	Pres., Grad. Student Assembly	Member
Glenda Gillaspy	Dept. Head, Biochemistry	Member
Randy Heflin	Assoc. Dean, Research, COS.	Member
Eric Kaufman	Faculty Senate	Member
Kacy Lawrence	Dir. of Assessment, Grad School	Member
Margie Lee	Dept. Head, Biomed. Sci. & Pathobiology, CVM	Member
Theresa Meyer	VP, Research	Contributor
Nancy Ross	Dept. of Geosciences, COS	Member
Neil Sedlak	Dir. Info. Tech., OVPRI	Member
Brennan Shepard	Dir. Financial Planning	Member
Cortney Steele	VT GrATE Fellow	Member
Kenneth Wong	Assoc. Dean, Grad School, Nat. Cap. Region	Member
G. Don Taylor	VP Research	Contributor

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External Research Expenditures per GRA

Land Grant Univ.	THE Global Rank	Res. Exp. ($M)	GRAs	Res. Exp. / GRA ($)
Purdue U.	64	449.3	2856	157,318
Virginia Tech	251-300	296.6	1638	181,074
U. of Illinois	50	469.4	2583	181,727
North Carolina St. U.	251-300	380.4	1801	211,216
Michigan St. U.	93	437.6	1758	248,919
U. of Florida	156	579.9	2205	262,993
U. of Minnesota	71	621.2	2316	268,221
U. of Wisconsin	43	799	2666	299,700
U. of Maryland	82	412.6	1180	349,661
Ohio St. U.	71	737	1903	387,283
U. California – Berkeley	15	602.7	1546	389,845
U. California – Davis	59	541.2	1289	419,860
Texas A&M U.	171	640.7	1375	465,964
U. of Arizona	159	435	875	497,143
Cornell U.	19	723.6	1093	662,031
Pennsylvania St. U.	81	676.3	846	799,409
Rutgers U.	176	517.8	444	1,166,216

- VT second most efficient in expenditure/GRA

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Number and funding sources of doctoral students

Full-time Doctoral Students by Count and Primary Funding Mechanism at Selected Institutions in AY2016-17.

		Funding Mechanisms						
		Assistantships			Fellow-	Trainee-	Self-	
Institution	Count	Research	Teaching	All	ship	ship	Support	Other
Michigan State University	2,211	51.0%	32.9%	83.9%	8.8%	1.6%	5.2%	0.6%
North Carolina State University	2,599	56.9%	27.2%	84.1%	9.4%		6.0%	0.4%
Ohio State University, The	3,170	39.8%	30.5%	70.3%	15.6%	2.1%	4.2%	7.9%
Pennsylvania State University, The	3,067	51.2%	28.2%	79.4%	8.7%	0.8%	10.9%	0.3%
Purdue University	3,185	57.7%	27.6%	85.3%	8.6%	0.6%	4.7%	0.7%
Rutgers, The State University of New Jersey	1,725	26.1%	38.7%	64.8%	15.0%	1.0%	15.4%	3.8%
Texas A&M University	3,655	43.6%	33.0%	76.6%	7.2%	0.5%	12.1%	3.6%
University of Arizona, The	1,654	26.5%	26.8%	53.4%	3.0%	3.0%	24.1%	16.6%
University of California, Berkeley	4,154	33.7%	26.5%	60.2%	33.2%	1.7%	4.8%	0.1%
University of California, Davis	3,063	29.8%	36.3%	66.1%	25.6%		5.8%	2.5%
University of Florida	3,118	39.3%	22.6%	61.9%	15.0%	0.4%	20.8%	1.9%
University of Illinois at Urbana-Champaign	3,809	42.5%	27.5%	70.0%	14.8%	0.1%	4.3%	10.9%
University of Maryland, College Park	2,854	39.0%	36.2%	75.2%	9.5%	0.9%	12.5%	1.9%
University of Minnesota	3,226	44.7%	29.6%	74.3%	15.3%	3.8%	5.3%	1.3%
University of Wisconsin-Madison	3,723	45.6%	23.8%	69.4%	10.9%	6.9%	8.5%	4.3%
Peer Average	3,014	42.4%	29.4%	71.8%	14.2%	1.6%	8.9%	3.5%
Virginia Polytechnic Institute and State University	2,148	53.4%	35.4%	88.7%	2.4%		6.2%	2.7%

Source: National Science Foundation, Survey of Graduate Students and Postdoctorates in Science and Engineering, Academic Year 2017

- VT second lowest # of science, engineering, health doctoral students

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Experiential Learning: Update

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Experiential Learning at Virginia Tech & Holistic Student Learning

Phase 1:
Explore, Discover, Enrich

- Curiosity
- Self-understanding
- Integrity
- Civility
- Leadership
- Ut Prosim

+

Phase 2:
Bridge to future endeavors

- Apply learning in authentic contexts
- Professional identity development
- Integrate and connect learning across settings
- Ut Prosim

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Experiential Learning at Virginia Tech Phase 2—Holistic Student Learning

Explore, Discover, Enrich

- Curiosity
- Self-understanding
- Integrity
- Civility
- Leadership
- Ut Prosim

+

Bridge to future endeavors

- Apply learning in authentic contexts
- Professional identity development
- Integrate and connect learning across settings
- Ut Prosim

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What is Phase 2 experiential learning?

1. Supports student transition to life after VT
2. Aligned to student goals for career
3. Customized to support the application of degree knowledge and skills in real-world contexts
4. Includes: Undergraduate research, internships, study abroad, service, and field work, as appropriate and relates to degree
5. Is transcriptable

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Unique Characteristics

1. Use of experiential learning principles for design and implementation.
2. Customization of frameworks and approaches to meet needs of disciplines and students.
3. Year Zero: Pilot departments to inform approaches and procedures
4. Integration with shared governance
5. Serve as the Quality Enhancement Plan (QEP)

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Quality Enhancement Plan (QEP)
SACSCOC Review in March

- *Topic* identified through ongoing, comprehensive planning and evaluation processes
- *Broad-based support* of institutional constituencies
- *Focuses on improving* specific student learning outcomes and/or student successes
- *Commits resources* to initiate, implement, and complete
- Includes a plan to *assess achievement*

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Progress to date

- Experiential Learning framework for departmental customization and integrated into the strategic plan.
  - 5-year goal (for QEP): 50% of undergraduate degree programs with experiential learning requirement.
- Governance Structures: Initiative will be pilot for new shared governance system. Committees formed and working:
  - Faculty Advisory Board
  - Student Advisory Board
  - Opportunity Providers Committee
  - Operations Committee
- Hired Director of Academy for Experiential Learning and Launched Pilot

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Progress to date

- Spring Pilot departments engaged in retreats and development activities. Implementing action plans for 2020-2021.
  - Sociology
  - Chemistry
  - Political Science
- Fall Pilot departments coming onboard for spring action plans:
  - Engineering cluster: Eng Ed, Civil, BEAM, ISE
  - Fish and Wildlife & BIT (for summer)
- Undergraduate Communications Course used the pilot program as a client in the spring and developed suggested messaging for communications to students
- Piloted technology infrastructure for experiential learning forms.
- Town Halls in Progress featuring the pilot departments (next Town Hall: Friday)

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Next Steps

- Virtual Town Halls Continue
- Will continue to develop infrastructure needed: technology, assessment, communication.
- Large scale benchmark data analysis in progress
- Make budget projections and commitments with aligned 5-year metrics.

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Challenges and Opportunities

- Scalability
- Opportunity Equity and Access across Disciplines: quality, paid/unpaid, regional availability, aligned with student interest/goals
- Workload & funding
- Diminished opportunities due to COVID-19

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Q & A