

ENVISIONING VIRGINIA TECH

---

# **BEYOND BOUNDARIES**

---

DISCOVERING NEW FUNDING MODELS  
THEMATIC AREA GROUP REPORT

PREPARED BY:

JERALD WALZ

JAIMIE EDWARDS

Office of the Senior Fellow for Resource Development

April 12, 2016



During the course of its meetings, the Funding Models Committee prepared a funding vision statement, identified core values essential to Virginia Tech's identity, and developed strategies for the future. The funding vision conceives of a future that understands the dynamic nature of higher education while identifying new revenue mechanisms, managing costs, and maintaining the high quality of research and education at Virginia Tech. The core values embrace ideals that are essential to maintaining the university's identity and frame the future; without them, Virginia Tech ceases to be Virginia Tech. Strategies for the future provide broad options to university leaders for implementing the funding vision while maintaining the university's core values.

## Funding Vision

Moving forward as a global land-grant university, Virginia Tech will develop and implement innovative and agile financial models dedicated to academic excellence, world-class research, and *Ut Prosim*, while advancing access and affordability.

## Core Values

Future funding initiatives ensure that Virginia Tech's core values are preserved now and in the future:

**Academic excellence**—promoting high-quality education

**World-class research**—conducting significant research that addresses global problems and makes a substantial scholarly impact

***Ut Prosim***—embracing Virginia Tech's *Ut Prosim*'s motto through responsible citizenship and meaningful service

**Public mission and purpose**—affirming our role as a public institution in Virginia, serving the state, nation, and the world

**Accessibility**—making Virginia Tech available to all who qualify and desire to pursue academic excellence and/or world-class research

**Affordability**—providing high-quality, high-value education at prices that are affordable to students and their families

**Global land-grant**—pursuing world-wide educational and scholarly activities that find solutions to complex global problems

**Experiential learning**—providing hands-on education that integrates research and application to solve complex problems

**Continuous improvement**—continuously re-assessing our progress in consideration of Virginia Tech's goals and core values

## Environment and Trends

National societal and economic trends create the environment in which Virginia Tech operates as a major research university. Throughout the United States, public investment in higher education has steadily eroded over the past thirty years (Archibald & Feldman, 2011; Blumenstyk, 2015; Zumeta, Breneman, Callan, & Finney, 2012). For example, since the 1980s, state appropriations for public universities have decreased while student enrollment has increased, causing universities to do more with less—or seek alternative sources of revenue to make up the difference (Baum, Ma, & The College Board, 2014). Public universities have filled some of this gap with additional tuition and fees, which increased by 225% since 1984 (Baum, Ma, & The College Board, 2014; US Bureau of Labor Statistics, 2015). This rise in tuition and fees, in turn, absorbed an increasing amount of median family income, from slightly less than 14% in the mid-1980s to almost 29% in 2014 (Baum, Ma, & The College Board, 2014; US Census Bureau, 2015). To compensate, students and families have turned to borrowing to pay tuition and fees; student loan debt now surpasses all other forms of outstanding debt (except home mortgages), at nearly \$1.2 trillion (Haughwort, Lee, Scally, & van der Klaauw, 2015).

### Current funding for Virginia Tech

At the state and university level, funding, philanthropy, and expenditures influence the financial conditions affecting Virginia Tech. Figure 1 illustrates the current funding sources at Virginia Tech (2015). Tuition and fees, external funding for research (e.g. federal), and state appropriations (including funds for cooperative extension) are the largest sources of funding for the university.

Figure 1: Sources of Current Funding at Virginia Tech (Hodge, 2015)

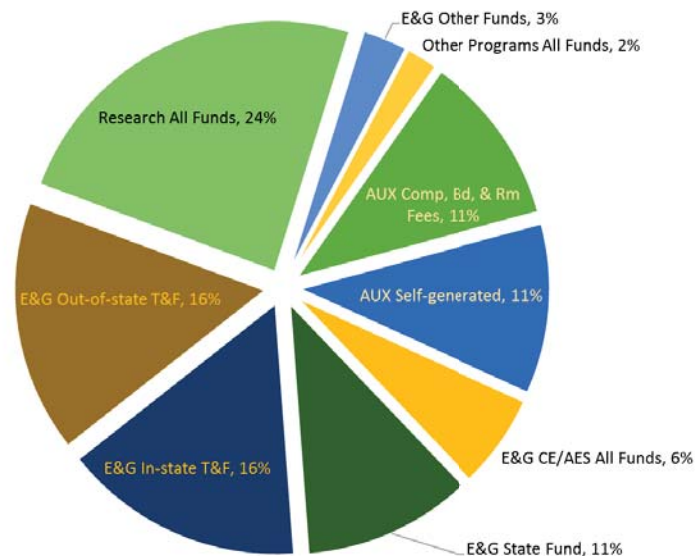
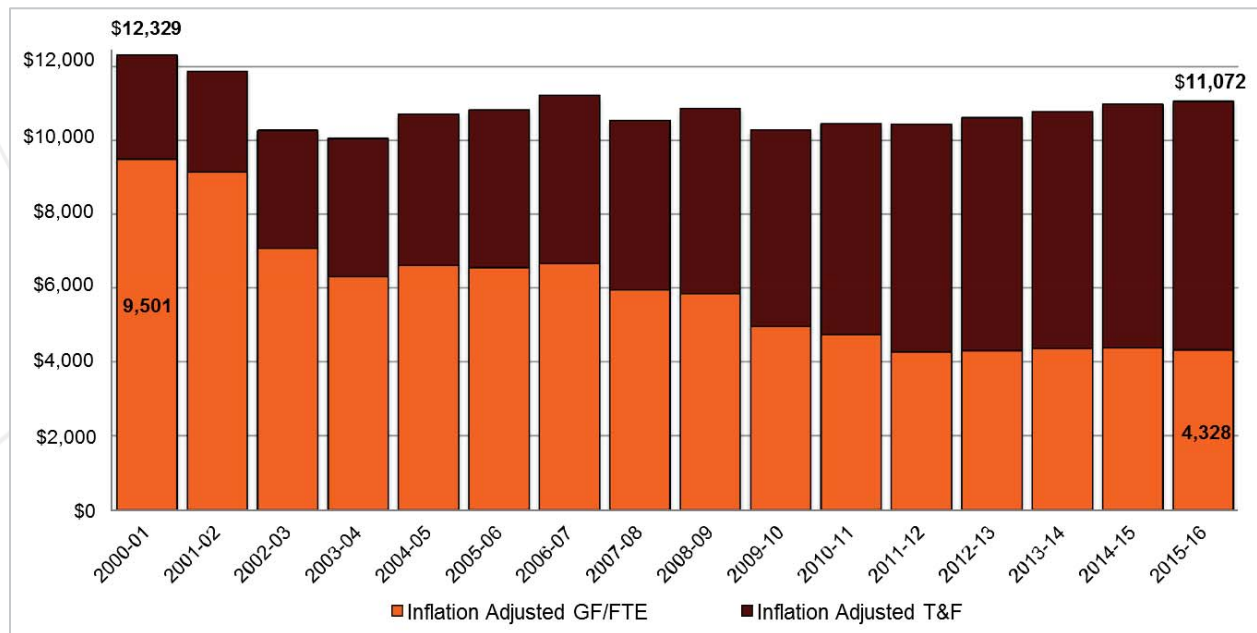


Figure 2 shows that at Virginia Tech tuition and fees and state general fund resources per student combine to generate fewer resources per student than in 2000-01 when adjusted for inflation (Hodge, 2015). At the same time that total purchasing power per student has fallen, expenditures for educational and general (E&G) programs—the instructional mission of the university—have risen 69% in the past ten years (see E&G expenditures in Figure 3).

Figure 2: Funding per Resident Student at Virginia Tech adjusted for inflation in 2001 dollars (Hodge, 2015)

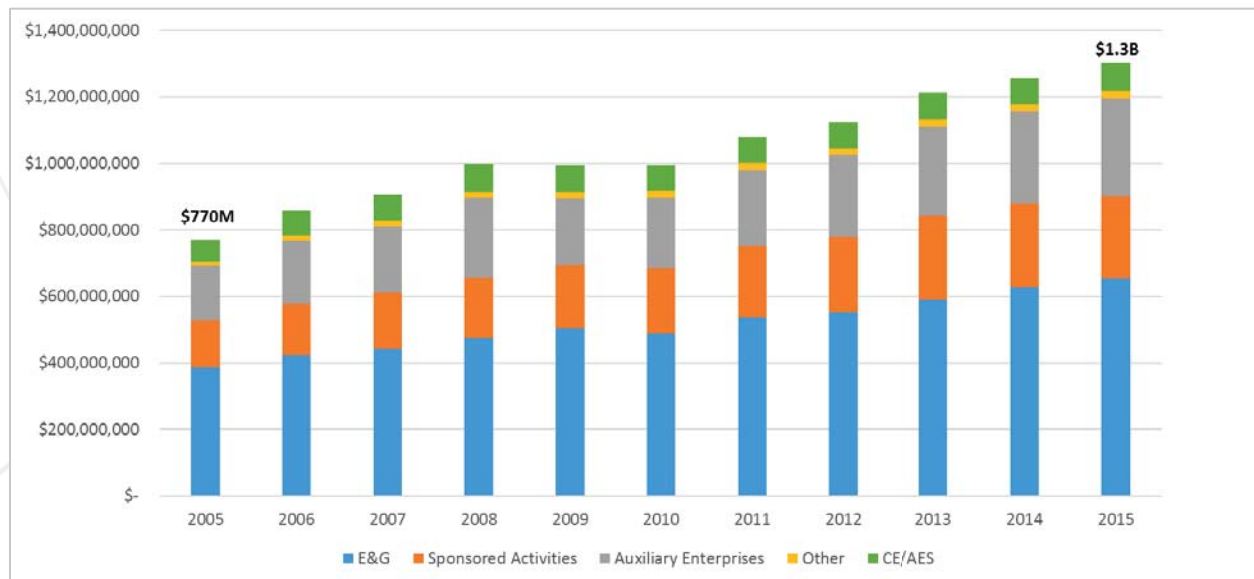


Today, the university is undertaking initiatives to adapt its current funding modes for the future by: a) increasing financial aid, b) managing enrollment growth, c) using incentives for growth of research and instruction, d) pursuing cost containment, e) supporting entrepreneurial ideas, f) ensuring Virginia Tech has authority to operate efficiently, and g) pursuing private philanthropy (Hodge, 2015). While these initiatives will have helped advance the university, additional strategies will be needed to further enable Virginia Tech to become more competitive as a world-class university in 2047.

### University expenditures

Figure 3 shows the growth of Virginia Tech’s total financial expenditures since 2004-05 (Broyden, 2015). Over this ten-year period, expenditures grew from \$770M to \$1.3B, with E&G, Sponsored Activities, and Auxiliary Enterprise activities growing the most of all expense categories.

Figure 3: Total Financial Expenditures at Virginia Tech, 2005-2015 (Broyden, 2015)



Viewed another way, in 2015, 79% of the total expenditures were for program activities, 6% for central administration, and 15% for program administration. Importantly, 62% of current expenditures were for personnel costs and 38% for operations. Finally, educational and general (E&G) program spending over the ten-year period increased 69%, while the rates of inflation for the US, generally, and higher education, specifically, were 20% and 30%, respectively (Broyden, 2015).

### Philanthropy

Presently, only 9% of Virginia Tech's alumni support the university annually, while experts consider 18-25% typical (Phlegar, 2015). At approximately \$800M, the Virginia Tech endowment ranks 114th nationally (NACUBO & Commonfund, 2016). Therefore, in the next ten years the university plans to pursue a growth model for philanthropy that has the potential to triple annual fundraising from \$80M to \$240M (Phlegar, 2015). Emphasizing research that addresses big problems attracts larger gifts from donors who desire to invest in universities pursuing world-class accomplishments. Additionally, a realistic 10-year target for the endowment is \$2B, growing its value through investment returns and \$750M in new giving to targeted projects like interdisciplinary research, Destination Areas, or faculty recruitment and retention. Furthermore, an endowment large enough to produce significant resources supporting research and academic programs is considered a hallmark of world-class universities (Salmi, 2009).

## Strategies for Future Funding

Looking to the future, the committee members used this research to inform their understanding and formulate the funding vision and strategies. Increasing revenues and restraining costs will be necessary to accomplish the university's goals of advancing as a global land-grant institution, envisioning the campus of the future, and preparing students for the world. Based on its deliberations, the committee developed several broad strategies that address the university's future funding model. The three strategies are outlined below. See the Appendix for specific examples.

### 1. Generating new learner-centered revenues

The learner-centered revenue strategy relies on generating new revenues by developing additional academic programs (such as traditional for-credit courses, continuing or professional education, or new educational initiatives) or expanding current ones. Some ideas, such as new majors, graduate certificate or degree programs, continuing, professional, and life-long learning initiatives, branch campuses, and study abroad programs, have already been implemented within higher education (Alstete, 2014). Virginia Tech must discover other innovative ways to generate learner-centered revenues that are in-line with its myriad long-range goals

Conversely, additional revenue may be generated by differentiating tuition pricing based on college or program; by reimagining pricing paradigms, by managing enrollment growth; or by adjusting the enrollment ratio of in-state and out-of-state students. Along with variable tuition, students may find new, multiple, and variable sources of support to fund their education; e.g. internships with government, business, or nonprofit organizations that fund tuition in return for service before or after graduation. Partnerships, alliances, or joint ventures, like the Virginia Tech-Carilion Medical School and Research Institute, provide additional opportunities to generate more revenues (Alstete, 2014). Such partnerships may also foster the development of a curriculum that integrates hands-on and classroom learning experiences, as well as benefit the university financially. Partnerships may reach beyond the organizational level and extend to the college, department, researcher, or student. Indeed, there may be multiple partnerships at different levels that support students, faculty, departments, or other university units. There are many different possibilities for generating new learner-centered revenue, including possibilities yet to be created. The challenge will be to create those learner-centered revenue strategies that produce additional revenue while maintaining Virginia Tech's identity and promoting continued academic excellence.

### 2. Developing philanthropic resources

Another strategy emphasized philanthropy. This includes increasing alumni giving for annual operations. The committee members suggest that financial giving is an integral part of Virginia Tech's *Ut Prosim* culture and this emphasis will increase philanthropic revenue. The strategy also entails realizing hundred-million-dollar or larger gifts from donors to fund projects like Destination Areas or other programs where the university enjoys world-class expertise. Another possible way to increase philanthropic revenue is to raise endowment gifts to support faculty recruitment and retention and student scholarships.

Making the university increasingly attractive and valuable to many different donors willing to support the university's mission is another philanthropic strategy for revenue generation. Such an approach becomes effective when the Virginia Tech brand advances through wise stewardship and by emphasizing high-quality education, world-class research, and influential public service. Many universities already enjoy the benefit of having strong philanthropic revenue. Virginia Tech must accelerate its efforts to secure philanthropic resources to remain competitive as a world-class institution by linking donors and alumni with the ongoing mission of the university.

### **3. Shifting the financial culture**

A third strategy stressed shifting the Virginia Tech culture concerning fiscal matters. Fundamentally, this involves understanding the university's expenditures thoroughly, both real costs and opportunity costs. Understanding what programs and services really cost is a critical first step. However, university decision-makers should also make Value to Experience (VTX) based decisions, i.e. determining the value realized in light of the experience offered. This embraces continuous improvement, making data-based decisions, optimizing resource utilization, and becoming more agile and innovative while maintaining Virginia Tech's core values.

Making VTX decisions will change the financial culture at Virginia Tech. It will enhance transparency and accountability. Determining the effectiveness and efficiency of a program or service is a necessary but insufficient measure for evaluating any proposed idea. Value is a broader and deeper measure of worth. Value includes notions of mission accomplishment, effort to effect, and opportunity costs. While the measure of value may include financial indicators, these are also insufficient. The experience provided to students, staff, or faculty must also be evaluated. In some instances, a program or service may have a high financial cost, but still be worth the effort for reasons other than financial ones. A more comprehensive picture of value includes multiple measures, both quantitative and qualitative.

This strategy of shifting the financial culture includes management or organizational tactics like streamlining administrative processes or sharing operations to reduce redundancy. It includes the possibility of sun-setting new, existing, or dormant programs or services after a process of evaluation. Such a strategy may also incorporate direct collaborations between the university and other organizations—to provide services the university already offers internally to other external constituents (thus increasing efficiencies by sharing costs with additional clients) or as an additional source of program funding (by seeking program sponsorship).

Other approaches may address the university's most precious resources—its people and infrastructure—for example, by creating multiple pathways for faculty specialization, advancement, and retirement or by optimizing facility use thereby reducing the need for new physical space. Prioritizing investment in people and programs before capital infrastructure may be a means to refocus future investments while ensuring adequate physical presence. The task is to understand the true value of a program, service, or capital project. Another is to discover the proper balance between mission and efficiency, optimizing the use of current resources, especially personnel, while adapting to a new fiscal culture. Thus, shifting the fiscal culture presents a difficult challenge. However, the opportunity exists for Virginia Tech to benefit from

additional revenue support for its core programs by understanding and evaluating its programs and services according to the value to experience produced.

## Conclusion

Given the state of recent trends and Virginia Tech's current funding and cost model, the university faces complex financial challenges and opportunities for the future. One well-established trend that will shape the university's future is the steady decline in state general fund appropriations. In recent years, Virginia Tech has compensated for some of this loss of revenue by increasing tuition, although the rate of increases in tuition revenue has declined. Another trend is the increase in expenditures above the general or higher education inflation rates. A third trend is the modest amount of philanthropic giving to the university. Together, these trends intensify the need to generate new revenue while containing the growth in costs.

One challenge for the future will be to find additional revenues, other than tuition, that support the current and future operations of the university's three-fold mission of teaching, research, and service. Raising additional revenue from the university's alumni base, which has a highly favorable view of Virginia Tech, is clearly one possible source of revenue, but of itself will not be sufficient for all the university's needs.

Another difficulty that must be addressed will be finding ways to bend the cost curve to more sustainable levels. While Virginia Tech's expenditures have increased faster than the rate of inflation in both the United States and higher education (Broyden, 2015), it is foolhardy to assume that such a trend may continue indefinitely without being addressed. Clearly this challenge presents opportunities for the university to discover new means to accomplish its mission while remaining effective and simultaneously being efficient.

Perhaps the greatest challenge facing the university is the need to embrace cultural shifts that embrace continuous improvement, fiscal agility, and innovation. The goals of advancing as a global land-grant institution, envisioning the campus of the future, and preparing students for the world each present different opportunities for the future, but all depend on the university developing new funding models to support the mission of the university. With all these challenges, the associated opportunity for Virginia Tech is to develop new financial models that propel the university into the mid-21<sup>st</sup> Century—dynamic funding models that advance academic excellence, world-class research, and *Ut Prosim*.

Ultimately, the task for Virginia Tech is to control both the alignment of resources and growth in costs so the university may continue to be competitive and achieve its strategic objectives, while investing in **new** initiatives. Some ways this may be achieved is through generating new learner-centered revenue, developing philanthropic resources, and shifting the fiscal culture, while maintaining Virginia Tech's identity and accomplishing the university's mission.

**The time to act is now.**



## References

- Alstete, J. W. (2014). Revenue Generation Strategies: Leveraging Higher Education Resources for Increased Income. *ASHE Higher Education Report*, 41(1), 1-138. doi:10.1002/aehe.20019
- Archibald, R. B., & Feldman, D. H. (2011). *Why does college cost so much?* New York: Oxford University Press.
- Baum, S., Ma, J., & The College Board. (2014). Trends in college pricing 2014. New York, NY: The College Board. Retrieved from <http://trends.collegeboard.org>
- Blumenstyk, G. (2015). *American higher education in crisis? What everyone needs to know.* Oxford: Oxford University Press.
- Haughwort, A., Lee, D., Scally, J., & van der Klaauw, W. (2015). Student borrowing and repayment trends, 2015. New York, NY: Federal Reserve Bank of New York. Retrieved from <http://www.newyorkfed.org/newsevents/mediaadvisory/2015/Student-Loan-Press-Briefing-Presentation.pdf>
- Broyden, R. (2015). Analyses of university spending. A PowerPoint presentation give at the Virginia Tech Beyond Boundaries Funding Models committee meeting, December 9, 2015.
- Hodge, T. (2015). Virginia Tech: Funding, trends, and future. A PowerPoint presentation given at the Virginia Tech Beyond Boundaries Funding Models committee meeting, October 28, 2015.
- National Association of College and University Business Officers [NACUBO] & Commonfund Institute. (2016). *2015 NACUBO-Commonfund Study of Endowments.* Washington, DC: author.
- Phlegar, C. (2015). Philanthropy and giving at Virginia Tech. A PowerPoint presentation given at the Virginia Tech Beyond Boundaries Funding Models committee meeting, November, 11, 2015.
- Salmi, J. (2009). *The challenge of establishing world-class universities.* Washington, DC: The World Bank.
- United States Bureau of Labor Statistics. (2015). Consumer Price Index [data set]. Retrieved from <http://www.bls.gov/data/>
- United States Census Bureau. (2015). Families (All Races) by Median and Mean Income: 1953 to 2014 [data set]. Retrieved from <http://www.census.gov/hhes/www/income/data/historical/families/>
- Virginia Tech. (2015). *2015-16 Operating and capital budgets.* Blacksburg, VA: author.
- Zumeta, W. M., Breneman, D. W., Callan, P. M. & Finney, J. E. (2012). *Financing American higher education in the era of globalization.* Cambridge, Mass.: Harvard Education Press.

## **Appendix**

### **Specific Opportunities & Ideas**

*Note: the committee discussed many ideas to enhance the university's funding and cost model. Based on a survey of the members, the ideas discussed are rank-ordered below.*

#### **Revenue generation (income strategies)**

##### **Philanthropic (Revenue strategies relying on donors' gifts)**

1. Increase donations from alumni
2. Raise money for endowment
3. Seek mega-gifts for large-scale projects
4. Boost annual giving
5. Connect alumni with students and seek donor contributions to support especially gifted students
6. Promote the Virginia Tech brand
7. Manage endowment investments for optimal return

##### **Academic revenues (Devising innovative educational strategies that generate additional revenues without increasing tuition)**

1. Seek corporate partnerships that support educational programs (e.g., extending partnerships with corporations to support students' tuition or offer them paid internships)
2. Incentivize startup businesses/projects that encourage entrepreneurship
3. Develop innovative curriculums and courses in collaboration with other institutions
4. Develop intellectual property or spin-off companies that create additional revenue streams

##### **General/Miscellaneous (broad strategies to increase revenue)**

1. Pursue collaborative ventures and partnerships with private businesses and other educational institutions to advance shared interests
2. Leverage NCR region as a way to access new and existing resources
3. Diversify and enhance current revenue streams
4. Seek targeted state funding focused on financial aid, research, and economic development
5. Access untapped federal, state, and private grant programs
6. Partner with local/regional economy

##### **Tuition (Revenue-boosting strategies through additional creative educational services)**

1. Pursue innovative academic revenue streams where there is true demand (e.g., "Nano degrees", badges, certificates, continuing/professional education, winter session, etc.), thus providing undergraduate students, among others, with the option to graduate in less than four years

2. Supplement traditional teaching delivery methods with innovative online education programs that allow accommodating an increased number of resident and nonresident students, while enhancing academic quality with state of art technologies (e.g., flipped classroom, blended teaching and learning, etc.)
3. Adopt variable/differential tuition pricing
4. Develop creative certificates for working individuals who desire to acquire specialized experience and who could be assisted financially by their sponsoring companies
5. Manage enrollment growth to provide an increased number of resident and nonresident students while ensuring capacity and academic quality; to include examining the ratio of in-state and out-of-state students
6. Continue expanding e-education through creating additional online graduate degree programs
7. Expand continuing, professional, and lifelong learning programs through continuous education starting with matriculation and continuing through certificate programs into pathways to graduate education
8. Examine if state support could increase in-state affordability instead of holding down price for all residents.

### **Budgetary savings (expense strategies)**

#### **Management (Savings strategies focused on administrative or organizational management)**

1. Create more cross-departmental, shared, or collaborative activities, reducing redundancy while increasing service
2. Leverage technology to obtain administrative efficiencies and increased service at a lower unit cost
3. Examine ways to further reduce administrative costs--streamline processes/procedures; centralize functions appropriately
4. Establish sunset date for new, existing, and dormant programs or services; evaluate program or service effectiveness; provide ability to terminate a program or service or (re)evaluate it
5. Review academic structures/procedures for efficiency
6. Deliver administrative services through consolidated, shared campus service centers
7. Provide support services for other higher education institutions, lowering per unit costs and generating additional revenue
8. Automate routine tasks (e.g. cleaning, landscaping, food preparation)
9. Pursue partnerships with high schools/community colleges to increase transfer credits
10. Accept a greater proportion of transfer students from Virginia community colleges

#### **Financial management (Savings strategies focused on fiscal management)**

1. Become more nimble when (re)allocating university resources, including faculty positions
2. Develop robust revenue/cost relationship model based on sound business constructs
3. Graduate students with less debt
4. Reduce student fees (e.g. athletics, health, arts) and replace with user fees, self-generated revenue, and/or private philanthropic funding
5. Conduct an independent, in-depth cost study, especially of administrative costs
6. Make VTX (Value To eXperience)-based decisions; consider ROI

7. Actively manage debt decisions
8. Identify inflation hedges to minimize cost escalation
9. Become a debt-free institution, saving resources dedicated to debt-service

### **Personnel (Savings strategies focused on human resources)**

1. Create multiple pathways for faculty specialization and advancement, ensuring excellence and quality in multiple areas (teaching, research, etc.)
2. Adopt incentive programs:
  - a. enhance employee productivity gains and cost savings
  - b. collaborative research and interdisciplinary behaviors
  - c. development/fundraising staff
3. Develop innovative ways to transition faculty or staff to retirement. Different paths/periods of activity for employees
4. Provide more options for students to work

### **Physical space (Savings strategies focused on buildings)**

1. Encourage shared physical infrastructure
  - a. Promotes cross-disciplinary work
  - b. Uses state-of-the-art equipment
2. Stabilize costs for physical plant by increasing utilization, developing partnerships with local developers for off-campus residential learning communities, shifting new research facilities to the Foundation-owned CRC
3. Optimize facility utilization by reducing reliance on physical space and modernizing and repurposing older buildings
4. Create options for off-campus residency for 1 year; students complete one year off-campus internship, co-op, study away/abroad
5. Adopt trimester system for year-round education
6. Provide additional options for on-campus residents that includes 3-to-a-room, premium floors/halls, year round, multi-year, spring/summer living

### **Other ideas**

### **Public policy decisions (Legislative or regulatory rules that affect funding)**

1. Work with state officials to earmark a state fund source designated from specific revenue source (sales or specific tax, lottery etc.)
2. Work aggressively on state initiatives to slow or stop the decline of state resources
3. Ensure that state fully funds its share of cost to educate a resident student. (State policy calls for Virginia to cover 67 %)
4. Secure complete autonomy from the state, with a reaffirmation of the university's commitment to its public mission and state goals, to ensure the flexibility needed to operate efficiently.
5. Propose that students who remain in Virginia after graduation, start new businesses, or create jobs will be able to deduct their tuition from their Virginia income taxes over an amortization period
6. Consider eliminating all subsidies (currently provided to schools in form of direct appropriation). Subsidies would be granted directly to enrolled students in form of

financial aid grant. Some weighting necessary for high cost programs (e.g. science, engineering)

**Financial model development (aspirational ideals to consider adopting)**

1. Create a culture that understands and evaluates expenditures and value added.
  - a. Use data to be innovative and agile
  - b. More responsible budgeting systems
2. Understanding ROI. Whatever you invest, you need to get a return
3. Transparency. Cultural shift in budget and funding practices
4. Adopt a citizenship model for Virginia Tech community—create culture of giving back

## Discovering New Funding Models Group Members

### Co-Chairs

Thomas Dingus

*Director, Virginia Tech Transportation Institute*

Lara Khansa

*Associate Professor, Business Information Technology*

### Members

Rajesh Bagchi

*Associate Professor, Marketing*

Sharon Barrett

*Business Manager, Civil and Environmental Engineering*

Richard Benson

*Dean, College of Engineering*

Warren Bickel

*Professor and Director, Addiction Recovery Research Center*

Jeff Earley

*Associate Vice Provost for Finance*

Jim Hatch

*Pamplin College of Business Advisory Council*

Tim Hodge

*Assistant Vice President for Budget and Financial Planning*

Charlie Klauer

*Research Scientist, Virginia Tech Transportation Institute*

Brett Langstaff

*Undergraduate Student, Finance*

Erin Lavender-Stott

*Graduate Student, Human Development*

Scot Ransbottom

*Chief of Staff and Deputy CIO, Office of the Vice President for Information Technology*

Akshay Sharma

*Associate Professor, Industrial Design*

Pamela Teaster

*Professor, Human Development*