



January 21, 2014

To the Virginia Tech faculty and staff:

It has been my custom to give you an update on the College of Engineering at the start of each semester. I am pleased to do that again, although I am feeling a little wistful over the fact that this will be the last time that I will speak of the Signature Engineering Building in the future tense. It was in the fall of 2005, my first semester as dean, when Paul Torgersen made the case to the Committee of 100, a group of our most engaged and generous alumni, that the College of Engineering was in strong need of a replacement for Randolph Hall. I followed with a vision for a new building that we now know as the Signature Engineering Building. The kick-off went well and, as a side benefit, I learned an important lesson about Virginia Tech lore – Paul Torgersen is an impossible act to follow!

A little over eight years later, the Signature Engineering Building is almost complete. The Hokie Stone is up, the scaffolding is down, and the landscaping has begun. Associate Dean Ed Nelson, who has shepherded this building through every stage of design and construction, tells me that we are on track for LEED Gold, a prominent benchmark for energy efficiency. Much of the move-in will occur towards the latter part of the spring semester and into the summer. The first classes in the building will be next fall.

I am sure that you've noticed how magnificent the building looks from the outside. The building will be just as impressive on the inside, especially from the signature education that will be delivered to our fortunate students. Many of these students, by the way, will be from other colleges. The Signature Engineering Building is home to eight general purpose classrooms, and it will be a rare Hokie who doesn't at some point have a class there.



At a later date we will dedicate the building and give proper recognition to the many individuals who made this happen. The list includes faculty, staff, students and alumni. I am particularly grateful for the generous support from students and alumni. The Student Engineers' Council donated \$100,000 to the building with proceeds from the Engineering Expo.

The Legislative Committee, comprised of engineering alumni and led by John Sparks, was crucial in gaining financial support from the Virginia General Assembly for roughly half the \$100 million cost. Alumnus Art McKinney played a vital role in the early stages of the building's design and had a major impact on the building's functionality, beauty and reasonable cost. Another alumnus who will be recognized at an appropriate time, made a lead gift of \$25 million towards the Signature Engineering Building. David Childress, a 2006 graduate of our Civil and Environmental Engineering Department, is the project manager for the Gilbane Building Company. Todd Shelton, a 1983 graduate of Civil and Environmental Engineering, is the project manager for Virginia Tech. I am moved by what our former and current students have done for the betterment of our current and future students.

Invent the Future

February 6 will be the annual “Hokie Day” in Richmond and we will once again assemble our Legislative Committee – all of them Virginia residents and job creators – to impress upon the Senators and Delegates the value provided to the Commonwealth of Virginia by you. Important projects follow behind the Signature Engineering Building. As I mentioned in my August 2013 letter, our capital construction plans call for a renovation and expansion of Holden Hall, followed by a renovation and expansion of Randolph Hall. Raising the challenge is the fact that the outgoing Virginia governor, Bob McDonnell, made no allowances for capital construction at state universities in his last budget. The Legislative Committee and I have our work cut out for us. We will take the long view and start building awareness in Richmond of the importance of beginning the design work for the new Holden Hall. Wish us luck!

Earlier this month we learned that *U.S. News and World Report* ranked the Virginia Tech Masters of Information Technology (VTMIT) as the #2 information technology program in the nation. The degree, aimed at working professionals, highlights a successful partnership between the Pamplin College of Business and the College of Engineering. Within the COE, much credit is due to our colleagues in Electrical and Computer Engineering and Computer Science. While all ranking systems have their limitations, it is rewarding to see that we have gained such prominent recognition from our peers for this web-based program, in a market filled with good options for an IT degree.

The Deans’ Forum on Global Engagement will take place in late March. Associate Dean Glenda Scales has led the planning effort on behalf of all of the college deans. A web site can be found here: <http://www.eng.vt.edu/deansforum>. I know that many of you will be presenting your work with international partners at the forum. This will be an excellent venue to learn more about the wide array of successful programs that have been developed across Virginia Tech.

Highlights of the Deans’ Forum on Global Engagement include: (1) a performance by Emmanuel Jal on March 25; (2) a keynote speech by Mitchell Reiss on March 26; and (3) a featured speech by Harriet Fulbright on March 27. Emmanuel Jal is a Sudanese hip-hop artist and survivor as a child-soldier conscript. Mitchell Reiss has a broad resume in government service including service as the director of policy planning in the State Department under Colin Powell. Harriet Fulbright is the president of the J. William and Harriet Fulbright Center. Throughout the forum there will interesting panel sessions, poster presentation, photographs, music and food. I look forward to seeing you there.

The college’s engagement with the University of Virginia and Rolls-Royce continues to grow through the Commonwealth Center for Advanced Manufacturing (CCAM) and the Commonwealth Center for Aerospace Propulsion Systems (CCAPS). Virginia State University and Old Dominion University have since joined CCAM in Petersburg. Funding in support of these efforts has allowed us to award three new Rolls-Royce Commonwealth Professorships to Srinath Ekkad (ME), Eric Paterson (AOE) and Jaime Camelio (ISE).

Over the last semester, many honors and awards came to engineering faculty members. Selected highlights include: NSF Career Awards to Denise Simmons (Myers-Lawson School of Construction) and Guohua Cao (School of Biomedical Engineering and Science); an NSF PECASE Award to Raffaella De Vita (Engineering Science and Mechanics); the SCHEV Outstanding Faculty Award to Wu Feng (Computer Science); and the Benjamin Franklin Medal in Mechanical Engineering to Ali Nayfeh (Engineering Science and Mechanics.) As noted, these are just a few highlights from the last semester. If you want to learn more about the extraordinary achievements occurring daily by the faculty, staff and students of this college, I encourage you to review the news archive maintained by the Director of News and External Relations, Lynn Nystrom, and her colleagues: <http://www.eng.vt.edu/news/articles>.

Last fall we had our 14 Bachelor of Science degrees reviewed by ABET and all fared well. Our programs are inherently strong, but proving that to knowledgeable external reviewers requires considerable care and effort. I want to thank all of you, especially the undergraduate program coordinators and the support staff in the Office of Academic Affairs and the various departments, for your excellent work.

As 2013 was giving way to 2014, we learned that the Federal Aviation Administration (FAA) made Virginia Tech a test site for unmanned aircraft. The goal is to insure the safe inclusion of these vehicles in the national airspace. We will be leading the Mid-Atlantic Aviation Partnership, which includes Rutgers University, the University of Maryland, and other entities from industry, state government and regional economic development. Virginia Tech has a distinguished record of research in autonomous systems, much of it being coordinated through the Virginia Center for Autonomous Systems (VACAS) and with support from the Institute for Critical Technology and Applied Science (ICTAS). We are particularly indebted to ICTAS associate director Jon Greene who shepherded our proposal through the FAA review. More on the project can be found here: <http://www.faa.gov/news/updates/?newsId=75399>.

Just in the last week, President Obama announced the creation of the Next Generation Power Electronics Manufacturing Innovation Institute. North Carolina State University is leading this effort with a major engagement from our Center for Power Electronic Systems (CPES). Over 25 other organizations will participate in this research effort on wide bandgap semiconductor power electronics. The research is funded at \$140 million over five years, with half from the Department of Energy and half from the participating organizations. More can be found here: <http://energy.gov/articles/factsheet-next-generation-power-electronics-manufacturing-innovation-institute>.

About the only topic in these letters that is more persistent than the Signature Engineering Building is the growing demand for admission to the freshman class. We continue to work with the Admissions Office to devise strategies that will help the university align student demand to the desired profile of the freshman class. We are also one year into our enrollment management plan which attempts to prevent “runaway” enrollment in any single department. Now that we have a year’s worth of hard data, I have asked Interim Associate Dean Erik Westman to study the trends and, if appropriate, propose modifications to the plan.

Of course, the best way to meet rising student demand is to hire more faculty members. We are, in fact, doing that, with more faculty searches running than in any other time in my nine years as dean. I urge you all to support your departments as we strive to attract new talent. At some point we all made the decision to advance our careers at Virginia Tech. Please remember that our prospective colleagues are on the other side of that important decision to join the Hokie Nation. I thank you for sharing your time and experiences with our faculty candidates, and for helping them make the same wise choice that you and I did.

Another important way to meet rising student demand is to employ more graduate teaching assistants (GTAs). Associate Dean Jack Lesko has studied our funding of GTAs between 2006 and 2013. His records show that the graduate enrollment increased by 17% from 1870 to 2193, while the undergraduate enrollment increased 32% from 5477 to 7209. In the same period, spending from our Education and General (E&G) budget on GTAs increased 50% from \$5.588 million to \$8.384 million. This includes both tuition and stipend payments. We are appreciative of the growth in university support for our GTAs but, unfortunately, a lot of the growth is lost in the “empty calories” of increased tuition rates and inflation. We also have a much larger undergraduate student body to support. Looked at in a different way, in 2013 we spent \$602 on GTA stipends for every undergraduate student. That is down from \$614 in 2006.

Guided by Dean Lesko's assessment, we are taking a two-pronged approach to bolstering our support of graduate teaching assistants. First, as I reviewed in my August letter, we are directing new money from the recently increased Engineering Fee to GTA stipends. This will permit us to support 20 additional GTAs. Second, we have made increased GTA support our only request to Provost McNamee in this year's budget call. We have asked the university to support 250 additional GTAs by fiscal year 2018. We have argued that this initiative supports many of the themes of the university's New Horizon strategic plan, including the stated goals to: (1) increase graduate enrollment by 1000 students; (2) enhance the overall Virginia Tech experience for students; (3) achieve \$680 million in the NSF accounting of research expenditures; and (4) foster greater diversity.

Please permit me a word or two about three Virginia Tech presidents. Work is underway to document "The Legacy of the Teaching Professor who was also President." It is little short of stunning that Paul Torgersen has managed to teach at least one three-credit course every semester from fall 1956 to the present. He has done this throughout his service as department head, dean, president and emeritus faculty member. I am grateful to Professor Brian Kleiner – Professor Torgersen's frequent co-teacher – for leading this effort to preserve the legacy of a singular educator. Thank you Professor Torgersen!

As I did in my fall letter, I want to commend Charles Steger, who, 49 years after his freshman year at Virginia Tech, now enters his final semester as our president. All of us at Virginia Tech embrace a life of service as a core value, but no one has been a greater embodiment of the *Ut Prosim* spirit than Charles Steger. While this may be his last semester as president, his legacy is far from complete. The university has been transformed since 2000 and has tremendous momentum. With the "Plan for a New Horizon" as a guide, we will be acting on President Steger's vision for Virginia Tech for many years to come. Thank you President Steger!

Finally, let me issue a warm welcome on behalf of the College of Engineering to President Timothy Sands. Dr. Sands is a highly accomplished researcher, educator and academic administrator. His distinguished career has taken him from the Lawrence Berkeley Laboratory, to Bell Communications Research, to the University of California, Berkeley (his alma mater), and to Purdue University, where he currently serves as provost. Dr. Sands will have faculty appointments in the Department of Materials Science and Engineering (MSE), and the Department of Electrical and Computer Engineer (ECE). Welcome President Sands!

Let me finish this letter as I have often begun others, by wishing you all well on the coming semester. We have much to look forward to.

Sincerely,



Richard C. Benson
Dean of Engineering
Torgersen Chair

Copy to President Steger, President Sands, Provost McNamee, VP Shelton and the COE Advisory Board