Overview

The College of Engineering’s (COE) long-term vision continues to be “to become and be perceived as the leading public college of engineering in the US and one of the preeminent colleges of engineering in the world.” We feel this is a necessary condition for NC State to achieve its vision of emerging as a preeminent technological research university as stated in the University’s strategic plan. Since none of our peer colleges of engineering are standing still, this vision assures that COE maintains and improves its national and global rankings.

COE is committed to providing a premier educational experience for our students and a world-class environment for our faculty members that makes them global leaders in discovery, learning and innovation. Underlying this mission is a sustained effort to engage and invest in vital areas of research growth and educational need. It involves, first and foremost, making strategic investments in faculty and infrastructure in areas that provide the greatest potential for attracting external funding and best serve the needs of our country and state. At the core of the COE’s vision is enhancing student success through the integration of research and education, recruiting and retaining outstanding faculty members and students and providing opportunities for interdisciplinary research at both graduate and undergraduate levels.

We are also committed to providing our students an educational experience that builds upon essential engineering fundamentals to develop students’ broader understanding of behavior, policy, entrepreneurship and global perspective. This includes the adoption of new academic initiatives, such as the NAE Grand Challenge Scholars program, which commits COE to the development of opportunities that provide our students creative learning experiences connected to the NAE Grand Challenges. These programs offer authentic experiential learning with clients and mentors that includes interdisciplinary experience, entrepreneurship and innovation experience and global and cross-cultural perspectives. We feel all these efforts are consistent with the University’s strategic plan and complement the development and implementation of its academic mission.

Our persistent efforts to attract and retain the highest quality faculty combined with our success in highly competitive national programs such as the NSF ERC program and others have continued to move us forward in almost every major “data” category in the latest US News graduate engineering rankings. We improved our US News graduate ranking to 28th overall nationwide this year. Our rank among public colleges of engineering improved to 16th. This represents a move up from 31st nationwide and 18th among publics just three years ago and is still the highest ranking that COE at NC State has had in many years. The College’s online master’s degree program ranks 11th overall in US News rankings of online graduate engineering programs, 7th among online graduate computer information technology programs, and 1st among online graduate engineering programs for veterans and active duty military personnel by U.S. News & World Report.
Changes in the Service Environment

The College received approval for an increase in its engineering fee that will begin in fall 2015. This fee increase will allow the College to provide significant enhancements to the student experience and to maintain and improve laboratories and classrooms. Having the fee will allow the College to expand important services for both undergraduate and graduate students. In addition, the fee provides much-needed funds for upgrading laboratory space for undergraduate research efforts as well as to upgrade classroom space for greater usability.

As reflected in the campus 2020 enrollment plan, the College is committed to expanding its number of doctoral students by 50 percent over the fall 2011 headcount. In order to achieve this goal and also maintain the College’s admirable Ph.D. time-to-degree statistics, it will be necessary to increase the number of faculty members available to mentor these doctoral students while also increasing the financial resources available to support the students. Studies have shown that the two greatest impediments to Ph.D. completion are lack of financial support and poor advising.

Over the last three years, with assistance from the Provost, the College has been able to increase the number of tenured and tenure-track faculty and continue to improve its facilities and infrastructure. This has resulted in significant increases in research productivity and growth in graduate enrollment. Nineteen new faculty members have accepted offers of employment for 2014-15.

Major Initiatives

The College is currently working to generate funding to help finance the Engineering Oval building. To be located on Centennial Campus, this building will house the Department of Civil, Construction, and Environmental Engineering and the Fitts Department of Industrial and Systems Engineering as well as College administration and an Engineering Education Enhancement Center. The budget for the building is approximately $154 million that will be raised using a public-private funding model. The NC Legislature is considering providing $77 million in capital funding. The College is in the process of raising $60 million from private donors. The University will provide the remaining $17 million.

Diversity

The College is committed to supporting a diverse faculty, staff and student body that is welcoming to all individuals. Efforts within the College to increase diversity continue to be successful.

In 2014-15, COE added two more female faculty members and one more African American faculty member, bringing our totals now to 44 female faculty members, 17 African American faculty members and 10 Hispanic faculty members. Since 2006, the College has essentially tripled the total number of women and doubled the number of underrepresented faculty members. While the College has made good progress, we still have a ways to go to achieve a level of diversity in our faculty that would mark us as a leader in this regard among our peer engineering colleges. A new diversity director has been hired to target students for involvement in the FREEDM and ASSIST NSF Centers.
The College has made excellent progress in recruiting women students. Our 2014 first-year engineering class includes the highest percentage of female engineering students in university history — nearly 25 percent — which is an increase from 18 percent five years ago and 14 percent 10 years ago. This year’s first-year population of female engineers sets NC State well ahead of the national average, in which females accounted for 19.1 percent of engineering enrollees in 2013, according to the American Society for Engineering Education (ASEE). We hope to realize similar successes in recruiting underrepresented minorities in the near future.

**Instructional Program Advances**

- UNC General Administration approved the Industrial and Systems Engineering/Poole College of Management Supply Chain Engineering & Management professional master’s degree program.

- The new Engineering Village living and learning community housed in Metcalf dormitory was launched. The Engineering Village is focused on first-year students who are interested in engineering.

- Research experiences for COE undergraduates continue to be a high priority in the College, as is the Engineering Entrepreneurship Program.

- Many of our departments have embarked with curriculum update and revision efforts consistent with feedback they received from the ABET accreditation visit in fall 2010 and external reviews of their graduate programs. Many of these efforts are guided by the National Academy of Engineering (NAE) “Engineer of 2020” report and the evolution of our curriculum to better address the needs of future engineering graduates.

- The College has also been actively engaged in efforts to better define and provide a career path for non-tenure-track faculty, and particularly non-tenure-track teaching faculty, as a way of enhancing quality and commitment to teaching.

- The College supports faculty and staff efforts to impact and enhance engineering education across the K-20 spectrum. Examples include:

  - continued support for the K-12 outreach activities in the NSF ERC proposals
  - internal support for The Engineering Place, home of the COE K-12 engineering outreach activities
  - support for more than 16 engineering summer camps at NC State for elementary, middle and high school students and satellite camps in Rocky Mount, Hickory, Havelock and Charlotte

- Our faculty and staff also continue to play an important role in the development and implementation of the NC State-Wake County Early Career High School on our campus, including their role in curriculum development around the concepts of the NAE Grand Challenges.
• A new undergraduate dual degree program was approved with NC Central University. Under this program students receive a B.S. in physics from NCCU and a B.S. in electrical engineering from NC State.

• Our site-based engineering program located at Craven Community College in Havelock, NC received initial accreditation from ABET for the B.S. in engineering, mechanical engineering systems program.

Research

Our aspirations, mission and strategic investments have enabled a culture that has produced some spectacular successes that have enhanced, in a very significant way, the reputation of COE and NC State as a premier technological research university. These successes include the unconditional renewal of both NSF Engineering Research Centers (ERCs), FREEDM and ASSIST. An unconditional renewal indicates the highest level of confidence in the future success of an ERC. In the case of FREEDM, this renewal assures NSF funding for the next three years, and in the case of ASSIST, this funds the center for the next five years. NC State is the only university in the country currently leading two NSF ERCs and one of only two universities to ever lead three ERCs in the history of this NSF program.

• Annual research awards through June 2015 are at $83M, or more than double the $40M in annual research awards generated by COE eight years ago.

• The College’s 2014-15 annual research awards represent more than 28 percent of the University’s total research awards in 2014-2015.

• Research expenditures in 2013-2014 were $165.6M, which represented a new COE high.

• Research expenditures for 2014-2015 are estimated to come in at almost $170M.

• COE also generated $17,439,835 in F&A in 2014-15, or 40 percent of the total F&A received by the University in 2014-15. This has increased by 35 percent compared to nine years ago.

• Of the F&A generated by the College, $4,486,797, or 27 percent, was returned to COE in 14-15. By contrast, in 2007-08, 34.53 percent of generated F&A was returned to the College.

• The National Consortium for Nonproliferation Enabling Capabilities (CNEC), a five-year award of $25 million from the National Nuclear Security Administration’s Office of Defense Nuclear Nonproliferation Research and Development led by the College, completed putting together its leadership team and began working toward its goals.

• The CNEC award coupled with a prior DOE Innovation Hub award for the Consortium for Advanced Simulation of Light Water Reactors (CASL), establishes NC State as a unique leader in nuclear energy research.
• The Next Generation Power Electronics National Manufacturing Innovation Institute, a $140M project to further development and manufacturing of wide bandgap semiconductors, hired a permanent director.

• NC State hosted the inaugural symposium for the NSF Research Triangle Materials Research Science and Engineering Center (MRSEC) at Hunt Library on Centennial Campus. Students and faculty members from NC State, Duke, N.C. Central University and UNC-Chapel Hill were in attendance. In addition, the MRSEC successfully completed its critical sixth year review by NSF.

• A new Department of Defense Multi University Research Initiative (DOD MURI) has been created in the Department of Materials Science and Engineering focused on refractory materials.

Extension and Outreach

The Engineering Place for K-20 Outreach

The various Engineering Place programs, including Engineering on the Road, Family STEM nights, summer camps, campus visits, the Solar House and others served more than 15,000 students nationwide this year. Staff worked with schools in eight states on incorporating engineering into school curriculum, provided teacher workshops to several hundred teachers on integrated STEM and went to the National Science and Engineering Festival, which hosted 600,000 people. Engineering camps continue to be a great success and are growing quickly. More than 1,200 students are on campus in a summer in grades 3-12. Partner camps are being held at six additional locations. There are a total of 38 weeks of camps. A new camp this year brought visually impaired and blind students to campus for the nation’s first engineering camp for VIB students.

Industrial Extension Service (IES)

IES has served as the North Carolina Manufacturing Extension Partnership (NCMEP) Center since 1995, operating under the College of Engineering. The North Carolina affiliate for MEP became available through a full-and-open competition held in fall 2014, the first time since 1995. IES submitted a comprehensive proposal and won a new five-year award that began in 2015. IES, through NCMEP, continues to help state manufacturers with important networking. Some examples include the Made in America campaign, which helps find domestic supply chain providers for transportation and other industries, and the membership-based Manufacturing Makes It Real Network.

While much of IES’ attention has been focused on small to medium-sized manufacturers, it also serves businesses in other sectors and government agencies across the state; economic benefits to those entities — new efficiencies or new employment in hospitals, schools or service companies — are not included in MEP survey results. In 2014-15, IES delivered 222 industry service projects for fees and 133 short courses, workshops and conferences. Additionally, IES clients in 63 North Carolina counties returned surveys to NIST’s third-party survey company, reporting results they attributed to work done by IES or IES’ MEP affiliates. Manufacturers reported $235.6M in economic impact from IES activities and the creation of and/or retaining of 1,869 jobs.
Biotechnology Training and Education Center (BTEC)

The Golden LEAF Biotechnology Training and Education Center (BTEC) is also a critical player in extension and economic development, particularly in providing human resources needed to grow and enhance the biomanufacturing sector in North Carolina. Its efforts, which include the involvement of the NC Community College System, are supported by bio-related industries in the state. During this fiscal year, BTEC received more than $1.35 million in revenues from non-state sources, up from $1.29 million the previous year. Of these outside monies, the largest component, $599K, was a grant from BARDA, part of the U.S. Department of Health and Human Services. Another $522K was generated by BTEC’s industry training program ($384K) and bioprocess and analytical service projects ($137K) via testing and services agreements. The grant from BARDA provided education and training on influenza vaccine manufacturing to individuals from 10 countries and nearly 350 individuals participated in customized or open-enrollment courses in the center’s industry training program. Enrollment in BTEC undergraduate and graduate programs increased 8.4 percent over the previous academic year, with 931 seats filled during the fall and spring semesters.

The BTEC model has been highly successful and has encouraged the development of similar training centers in biomanufacturing throughout the United States, Europe and Asia. BTEC is planning an expansion, called BTEC Innovation and Commercialization (BTEC-I/C). If successful, BTEC-I/C will engage many biopharmaceutical and related companies in an effort to generate additional space, equipment and personnel to offer a wider variety of services to NC State students, incumbent workers, large biomanufacturers and start-up companies.

Faculty

The College of Engineering Faculty Advancement unit was reorganized (and renamed) to lead initiatives in faculty development, promotion and tenure, and special initiatives/broadening participation. The unit continued to work with established and emerging programs at NC State to identify and bring strong candidates in the faculty and student realms to the College. There are also professional development initiatives for current COE faculty, with particular attention paid to programs to facilitate the career success of women and underrepresented minority COE faculty members.

The PURPOSE Institute (Promoting Underrepresented Presence on Science and Engineering Faculties), under the direction of Associate Dean and Professor Dr. Christine Grant, sustained NSF ADVANCE activities at NC State, working at the national level to connect with diverse faculty members and networks to raise the visibility of NC State to diverse candidates. A series of programs coordinated by the College’s Faculty Advancement team was instrumental in bringing to NC State a diverse set of speakers through the Seminars of PURPOSE program and a set of diverse postdoctoral scholars in the Building Future Faculty Program. Additionally, NC State had a national presence through the NSF ADVANCE statewide conference for mid-career faculty in 2014 attended by a diverse set of participants from across the country. This builds on the ADVANCE Peer Mentoring and Leadership Summit and ADVANCE-ENG Research Workshop held on Centennial Campus in 2011.

- Growth in research is directly tied to our faculty growth, which is why our major investment continues to be in faculty hiring.
• Thirteen new tenured/tenure track faculty and two new non-tenure track faculty joined the COE and affiliated departments in 2013-14.
• Hires include one full professor, three associate professors, nine assistant professors, one research assistant professor and one lecturer.
• The total new faculty hired by COE since 2007-08 is 145, with 124 of these being tenure/tenure track faculty and 21 non-tenure track faculty.
• The College was able to retain five faculty members through faculty retention efforts in 2013-14.
• The College was awarded the lead for two new Chancellors Excellence cluster hire initiatives in Global Water, Sanitation and Hygiene and Energy Systems. The college also is a major player in three additional clusters selections.

Students

Our students are the College’s main focus. Each year, we recruit the highest-quality students possible and work to bring all students successfully through their years at NC State to graduation.

Undergraduate enrollment. The fall 2014 undergraduate enrollment was 6,584 (1,629 first-year students, 1,167 sophomores, 1,615 juniors, 2,173 seniors) and represented an increase of 241 students over the fall 2013 enrollment of 6,343. Enrollment of women increased to 1,342 (20.4 percent) in fall 2014, compared to 1,208 (19 percent) the previous year. Enrollment of minority students was 653 (9.9 percent) in fall 2014, which is an increase of 36 over the previous year. Fall 2014 minority enrollment included 268 African Americans, 269 Hispanic students, 27 Native Americans and 89 minority students of more than one race.

Graduate student enrollment. Graduate student enrollment for fall 2014 was 3,159 (1,980 master’s and 1,179 doctoral) compared to 2,929 (1,824 master’s and 1,105 doctoral) the previous year. International students made up 57 percent (1,809 students) of the enrollment; 23 percent (738) of the students were women. Minority enrollment was 8 percent (265 students).

Undergraduate degrees awarded. The number of bachelor’s degrees awarded for 2014-15 was 1,342, compared to 1,283 for the 2013-14 year.

Graduate degrees awarded. The number of graduate degrees awarded during 2014-15 was 1,029 (847 master’s degrees and 182 doctoral degrees. In 2013-14, there were 1,011 degrees awarded (846 master’s degrees and 165 doctoral degrees).

Undergraduate recruiting. During spring 2015, Engineering Academic Affairs offered seven yield events for fall 2015 accepted students. One such event was offered specifically for women and minority freshmen students and highlighted the Women in Science and Engineering program as well as the Minority Engineering Programs and the Women in Engineering program. The event was designed to not only increase enrollment of women and underrepresented students, but also to make the opportunities and community support aspects for these populations more visible to prospective students.
Included in the College’s spring yield events were four Experience NC State visitations offered by the university for accepted freshmen. Each College event included information sessions, student panels made up of Engineering Ambassadors, parents’ sessions and tours of Centennial Campus. A total of approximately 1,050 people, including 450 students and 600 parents, attended the seven spring visitation events.

Additionally, the Engineering Open House in March 2015 drew approximately 4,000 people including admitted and prospective high school, middle school and community college students plus parents.

**Graduate student recruiting.** The Engineering Foundation provides a $70,000 budget to bring outstanding graduate applicants to the campus for personal interviews and other recruiting activities to attract the best candidates to NC State. Of the 126 students who visited the campus, approximately half are expected to enroll. The Directors of Graduate Programs encourage continuation of the activity.

The Engineering Foundation provides a $380,000 budget for supplemental fellowships to new incoming graduate students. The Graduate Merit Awards are provided to attract high-quality graduate students to NC State. For the 2014-15 year, this program supported 58 fellows at increments of 5K, 10K and 11K.

The College of Engineering received an allotment of funds from the Provost’s office in the amount of $250,000 to support new incoming Ph.D. students for the 2014-15 academic year. COE supported 10 Ph.D. students at the stipend level of $25,000 from the period of August 1, 2014 – July 31, 2015. Tuition and health insurance was included. These are recurring funds and are available for the 2015-16 academic year. These fellowships are now known as the Dean’s Doctoral Fellowships.

**Distance Engineering Education Programs**

The College offers several distance education courses and degree programs for students in North Carolina, across the United States and in other countries. Fifteen online graduate students served more than 800 working professionals last year in the offering of approximately 90 graduate courses each fall and spring semester and 30 courses during the 10-week summer term. The total number of graduates in the online graduate degree program for 2014-15 was 122. Mechanical engineering leads in the number of online graduate students with 142, followed by the civil engineering online program with 88 students and the Master of Engineering program with 87 students.

The college also administers 2+2 engineering programs on the campuses of UNC Wilmington and UNC Asheville and in Havelock. Several students remained in Havelock or in Asheville to complete a Bachelor of Science in engineering (BSE) degree program in a special area of concentration. The Mechanical Engineering Systems concentration graduated seven students in Havelock and 15 students graduated from the Mechatronics Engineering program in Asheville. Both programs have had an increase in their enrollments and admissions during the past academic year. More than 280 students will continue their academic programs in one of these site-based programs.
Enrollment in the Computer Programming Certificate, designed for individuals who already have an undergraduate degree in an area other than computer science, has also increased in registrations and the completion rates have doubled.

Women in Engineering (WIE) program

The WIE program received national attention this year, as the percentage of women in our first year class rose above 25 percent for the first time. The national average remains at 18 percent. The ESCAPE to Engineering bridge program for incoming female students continues to be exceptionally beneficial for our students. Each year since its inception, 40 to 50 young women have come to campus for a week in the summer. The functions of University Orientation are incorporated into programming as well as field trips to local industries, social activities and success-based activities. This camp is funded by donations from John Deere, Praxair and ABB.

The WIE program staff continues to work in conjunction with Academic Affairs staff on recruitment and retention issues for women, having been joined by Kesha Entzminger, whose appointment is split between WIE and Minority programs. In part through Kesha’s work, the two programs are working together on many efforts. New programs have included Dinner Dialogs for students within departments and a Tools Workshop where students can come and learn how to solder, how to use power tools, how to pipette and other skills needed in today’s engineering laboratories.

Minority Engineering Programs

The Minority Engineering Programs offer a variety of specially designed initiatives aimed at recruiting and retaining talented minority engineering students.

The Overnight Minority Recruitment Weekend is geared toward high school seniors who have been admitted to the College. Twenty-eight admitted minority students along with approximately 60 family members/guests participated in this year’s event.

The Summer Transition Program (STP) is a major minority engineering student recruiting program that brings new students to campus during the second summer session before fall of their freshman year to assist them in making a smooth transition from high school to college by offering courses in mathematics, chemistry, study skills and the College’s computing environment. Using information provided by the University’s admissions database, 352 potential STP participants were invited to apply for the program. Thirty-eight applications and surveys were received and all were accepted as participants.

For the 2014–15 academic year, four sections of E144 – Academic and Professional Preparation I, were available to the 156 incoming minority engineering freshmen. One hundred and twenty seven students enrolled in the fall course. E144 is specifically designed to help minority engineering students become better acclimated to our campus and the College.

Engineering Entrepreneurs Program

The Engineering Entrepreneurs Program (EEP) senior design sequence served 124 students this year, more than double the previous year. A record 22 student teams completed the sequence.
Engineering students comprised the vast majority (72 percent) of the 634 students participating in the NC State Entrepreneurship Initiative in 2014-15. Participation increased by more than 130 percent from the prior year.

Alumni of the EEP have continued to garner success with their start-ups. Most notably, Undercover Colors, founded by four graduates of Materials Science and Engineering, has raised $1.2M in funding and is continuing to develop their ground-breaking technology in the Centennial Campus Incubator. NicoTrax, a smoking cessation platform company launched from the Garage by EEP graduates, has recently released its first “smart” cigarette pack. EEP alum Tia Simpson, founder of Vibrance Studio, LLC, was selected as a 2014-15 ThinkHouse Fellow. Allison Fairbank, who launched FreshBox, LLC, from her EEP senior design project, has been named a ThinkHouse Fellow for 2015-16.

**Engineering Career Fair**

The Engineering Career Fair continues to be one of the largest in the country with more than 340 companies attending our events in the fall and spring semesters of 2014-15.

**Fundraising**

The College realized an increase in gifts and new commitments setting a new fundraising record. Total gifts and new commitments totaled $21,750,000, which is a 7 percent increase over last year. This number includes a portion of gifts and conditional pledges for the Engineering Oval Project.

A total of $9.2 million was added to endowment, which is slightly lower than last year but commitments to current operations were $12.475 million, which represents a $7 million increase over last year.

The Engineering Oval building was the number one fundraising priority for the year, with $19.5 million in gifts and conditional pledges raised for the project. Of this total, $14,900,000 in conditional pledges will be counted in 2015-2016 fundraising results.

The endowment directly benefiting engineering students, faculty and programs passed $120,700,000. This represents a 20 percent increase from last year due to gifts realized from endowments and continued positive return on investments.

The College held its third annual homecoming, focused on engaging alumni with the College’s academic and research content. A very successful special reunion of the Engineering Operations (EO) alumni was held prior to the main homecoming event. Dr. Jerome Lavelle was emcee of the EO event, which featured Dr. William T. Easter, emeritus associate professor of electrical and computer engineering and long-serving director of the EO program as a special guest.

**Administration**

- Dr. Doug Reeves, professor in the Department of Computer Science, was appointed as the assistant dean for graduate programs in the College.
• Dr. Christine Grant, professor in the Department of Chemical and Biomolecular Engineering, was named associate dean for faculty advancement in the College. At the same time, the College’s Faculty Development and Special Initiatives Unit led by Grant was restructured and renamed the Faculty Advancement Unit.

• The College hosted a regional meeting of the National Academy of Engineering (NAE) followed by a public symposium on Tissue Engineering through Regenerative Medicine to Rehabilitation Engineering.

• The College hosted members of the UNC Board of Governors in December 2014 and provided an overview of the College to a meeting of the NC State Board of Visitors in March 2015.

• The 2014 Paul Zia Distinguished Lecture Series in Civil Engineering and Construction featured Ahmad Rahimian, Yoram Elion, Alan Pauli and Juan Esteveez, who were part of the team involved in the construction of 1 World Trade Center at ground zero in lower Manhattan. More than 500 people attended the event.

• The 2015 Warren L. McCabe Lecture Series featured Dr. Ann L. Lee, senior vice president, Genentech, and head of global technical development, Roche. More than 200 people attended the lecture.

• The 2015 Robert F. Davis Distinguished Lecture drew nearly 200 attendees and featured Dr. William Nix, the Lee Otterson Professor Emeritus at Stanford University. Nix is a recipient of the Acta Materialia Gold Medal and is a member of the National Academies of Engineering and Sciences.

• The Engineering Place hosted the annual North Carolina Future City competition, in which some 2,500 K-12 students from across the state participate.

• The College hosts an annual social event for the FIRST Robotics regional competition participants. Approximately 650 high school students attended the spring 2014 event.

Recommendations and Concerns for the Future

Our persistent efforts to attract and retain the highest quality faculty combined with our success in highly competitive national programs such as the NSF ERC program and others have continued to move us forward in almost every major “data” category in the latest US News graduate engineering rankings. While it is great to see that we are moving in the right direction, our peer institutions are also making strides to improve, so we are aware that maintaining and improving upon this ranking will continue to be a significant challenge.

As was the case last year, the biggest challenge nationally is that no one is standing still and many of our peers and aspirational peers are receiving significant commitments to grow even more their faculty size and resources in engineering. These investments by our peers and aspirational peers increase competition for top faculty members and create the need for available funds to retain our current top faculty. This pressure will only continue to increase as other institutions move forward with expansion plans.
Another major challenge will be dealing with unplanned increases in undergraduate enrollment in 2014-15 and going forward. Our previous plan had been to maintain, or possibly reduce, our undergraduate enrollment; however, this will no longer be the case given the more than 25 percent increase in first year engineering students admitted to NC State for fall 2014. The adverse impact that this will have on what is already a strained student-faculty ratio for a research college of engineering may ultimately lead to stagnation or reduction in research productivity since the inverse relationship between these two metrics is well known and documented. We still plan, however, to grow our graduate enrollment, particularly our Ph.D. enrollment, which is critical to both enhancing the rankings and reputation of COE as well as furthering the achievement of NC State’s strategic plan.

The College also faces the challenge of raising private sector capital support for moving the rest of the College to Centennial Campus. This effort, which is now under way with the solicitation of private sector capital funding for the construction of EB Oval, represents a shift in the way university academic buildings are funded and built and involves exploring all possible funding options for future capital investments for academic space. The support of the administration for the public/private capital funding model that we are now implementing is very much appreciated and has allowed us to move forward in a significant way on this option.

Nationally, there is an increase in the number of colleges of engineering that are now receiving revenue from “differential tuition” or “differential fee” mechanisms to support this growth. Virginia Tech, Virginia, Texas A&M and practically all of our major peer colleges of engineering have a mechanism like this in place providing a substantial discretionary recurring revenue source that gives them a distinct competitive advantage in the recruitment and retention of top faculty members and students and development and maintenance of world-class facilities and infrastructure. The support and approval of a differential engineering enhancement fee for COE starting in fall 2015 represents a very significant step in providing our College with a comparable mechanism that enhances our ability to stay competitive with many of our peers that have implemented similar mechanisms in the past. This fee increase will allow the College to provide significant enhancements to the student experience and to maintain and improve laboratories and classrooms.

The support the College has received in the past from the Legislature and the University has been crucial in assuring that we did not lose ground among our peers nationwide. I, and all of us in the College, am most appreciative of this, especially in light of the budget reductions and challenges we have had to face together. The steps that have been taken during this last year through the approval of the differential engineering enhancement fee and the support that is pending from the Legislature for partial funding of EB Oval represent very significant steps forward in our quest to be among the premier colleges of engineering in the nation. The support of our administration in both of these efforts means a great deal to all of us in the College and for this, as well as other related support, we are most grateful. While many challenges remain, the opportunities right now seem equally bright, and we look forward to certainly a brighter future than we were envisioning last year.