University returns to top 50 in NSF research ranking

By Susan Trulove

Virginia Tech has ranked 49th out of 601 universities based on research expenditures of $216.3 million in 2001, according to the National Science Foundation (NSF) Division of Science Resources Statistics report issued last week. Tech is 34th among public universities.

In fiscal year 2000, the university reported total research and development expenditures of $192.6 million for the NSF survey of colleges and universities nationwide, but ranked 51st despite the twelfth-highest increase among the top 50 universities.

Expenditures include research sponsored by state and federal agencies, private foundations, and industry, as well as institutional investment in research, both direct and indirect. Institutional investment includes equipment and utilities, for example. Virginia Tech’s fiscal year ends June 30, but it takes almost a full year for NSF rankings of the previous fiscal year’s expenditures because of the number of institutions and differing accounting periods.

President Charles Steger has challenged the university to achieve top-30 status by 2010. “Prospects for the university exceeding the 30 goal remain good; our growth in FY 2001 met our expectations,” Steger said. “Faculty members are excelling. We have a significant number of young faculty members who have received NSF Career awards.”

Four faculty members last year and two so far this year received the awards, which are in the range of a half million dollars from NSF and are matched by significant investments from industry.

Research expenditures for fiscal year 2002 (the year ending June 30, 2002), which have already been reported to the NSF, are $232.6 million. In FY 2002, the campus received 2,330 awards totaling in excess of $157 million dollars. Support for these projects originates from an ever-expanding base of sponsors. Today, there are nearly 1,000 sponsors funding more than 4,000 active projects. Researchers pursue new discoveries in agriculture, biotechnology, information and communication technology, transportation, energy management—including leadership in fuel-cell technology and power electronics, and a wide range of other initiatives.

Certificate Authority designed to improve computer security

To address the security needs of the university’s computer network, the Information Systems and Computing Group is establishing the Virginia Tech Certificate Authority, a service that will provide digital certificates to securely sign documents, secure transactions, and protect identities.

The service is the main component of the university’s new public key infrastructure (PKI), a system of digital keys assigned to computer users to verify identity. “When PKI is widely deployed, it will increase security and make it possible to use digital signatures in situations where a written signature is required today,” said Pat Jackson, associate vice president for information systems and computing.

The first phase of the new service establishes the Virginia Tech root certificate authority and the Virginia Tech Class I server certificate authority, which are comparable to virtual passport offices. They certify a user’s identity and privileges before granting a digital certificate containing an electronic key, or signature. The digital certificate guarantees the source and authenticity of data transmitted by a user. The certificate can be used for on-line services that use the university’s new Enterprise Directory to authenticate faculty and staff members and students.

James Powell, director of the Internet Application Development Group, said the certificate authority is a crucial infrastructure component. “It will enable us to begin constructing a hierarchy of more specific certificate authorities for Virginia Tech that in turn make things like server certificates for secure web services and personal digital certificates that can be used for signing documents and electronic communications,” Powell said.

The Information Systems and Computing Group held a key-generation ceremony April 10 at which administrators received keys to launch the certificate authority. Using multiple administrators ensures security because it requires all key holders to be present when the system is established or accessed. “It is imperative that we use the strongest security methods available to protect the digital private key,” said Frank Galligan, the project manager of the Virginia Tech Certificate Authority. He said several security methods will be used to protect the certificate authority’s private keys.

Establishing a certificate authority will eliminate the university’s need for certificates from commercial vendors, such as Verisign and Thawte, lowering the cost per certificate to allow more users to take advantage of the technology. Once established, service costs will remain low and will mainly involve hardware-support contracts and personnel costs.

The future phases of the project will provide certificates for communicating with web server transactions.
Spectrum
FRIDAY, APRIL 18, 2003

ACTIVITIES

Events

Sunday, 20
TA Event: 2 p.m., Squires Studio Theatre: Human Rites.
Easter Buffet, 11 a.m. to 1:30 p.m., DBHCC.
Music Event (rescheduled from 2-16), 4 p.m., Squires Recital Salon.

Monday, 21
Administrative Professionals Week.
On-campus Bloodmobile (through 4-23).
University Council, 3 to 5 p.m., 1045 Pamplin.

Tuesday, 22
TA Event, 8 p.m., Squires Studio Theatre: Human Rites (through 4-26).

Solar house tour scheduled for Earth Day

Virginia Tech’s solar house will be open to the public on Earth Day, Tuesday, April 22, from 2 to 6 p.m. at the Research and Demonstration Facility off Plantation Road in Blacksburg. The 530-square-foot house was designed last year by students and faculty members in the College of Architecture and Urban Studies and the College of Engineering to compete in the national Solar Decathlon. The competition was held last fall in Washington, D.C. The house placed fifth overall, and took first place in two of the 10 categories.

The house incorporates unique and future technologies. A seven-minute promotional video of the house, produced by University Visual and Broadcast Communications, will also debut at the event.

The house has been featured on Home and Garden Television and the DIY Channel, as well as numerous trade magazines and newsletters. For more information, go to www.caus.vt.edu/vtsolar.

New BT Conference Pass Program offered

The Office of Transportation at Virginia Tech and Blacksburg Transit (BT) have developed a new program, specifically designed for conference guests of Virginia Tech. For a minimal up-front fee, guests can ride the BT fare-free around campus, around town or to the mall.

BULLETINS

Vaccine

CAREER

Undergraduate Research, Potential Graduate Student Conference scheduled

The First Annual Virginia Tech Undergraduate Research and Potential Graduate Student Conference will be held Monday, April 21, from 8:30 a.m. to 2 p.m. in Squires Student Center.

Sponsored by the Center for Academic Enrichment and Excellence and the Office of the Provost, the conference offers a professional forum for undergraduates to showcase the results of their involvement in scholarly research and gain essential information relevant to their pursuit of graduate study.

This professional development opportunity is intended to support the research mission of the university, enrich the educational experience for undergraduates at Virginia Tech, enable students to enhance their oral-communication skills through a scholarly exchange of information and ideas, and assist undergraduates in exploring graduate education as a possible career option.

Specifically, the Virginia Tech Undergraduate Research and Potential Graduate Student Conference will offer a means for students to share/exchange research information and ideas in a professional setting; encourage awareness of undergraduate research and celebrate students’ involvement; assist students in developing effective presentation skills; strengthen public-speaking skills and other essential competencies necessary for success in graduate school; facilitate interactions and networking opportunities between faculty members/administrators and undergraduate students; and provide an opportunity for students to learn more about preparing and securing funding for graduate school.

Students will give oral and poster presentations. Presentations will be judged and first- and second-place prizes will be awarded for the best oral and poster presentations per academic category. Topics for the graduate school information session include understanding the graduate application and admissions process, preparing for graduate admissions tests, getting involved in undergraduate research, and funding graduate school.

Mark McNamee, university provost and vice-president for academic affairs will present opening remarks. A luncheon will follow all conference activities with Karen DePauw, vice-provost for graduate studies and dean of the Graduate School as the keynote speaker.

Contact Sonja Crockett (scrockett@vt.edu) or Miya Simpson (msimpson@vt.edu) at 4-1433 for more information.

AUGUST

Continued from 1

The CAREER FAQ is at www.nsf.gov/pubs/nsf03031/nsf03031.htm. Those who plan to attend should contact Debbie Nester at debbiel3@vt.edu or phone 1-5410.

NSF CAREER Program workshop offered

An NSF CAREER Program workshop will be held on Friday, April 25 in the Fralin Center auditorium, from 3 to 5 p.m. The workshop is aimed at untenured, full-time teaching faculty members and will focus on practical strategies for developing successful proposals.

CAREER awards are made to outstanding young teacher-scholars who present career-development plans that effectively integrate research and education, with an emphasis on combining the excitement of research with inspired teaching. These are substantial awards that will support significant multi-year research plans. Over the years, Virginia Tech faculty members have done well in the national competition with nearly three dozen CAREER winners among active faculty members.

Current NSF CAREER guidelines and procedures will be reviewed, with tips for successful proposal writing. Also featured will be short presentations and a panel discussion by recent Virginia Tech CAREER Award winners. The informal workshop will conclude with a question-and-answer period.

All untenured, full-time faculty members in the following disciplines are eligible for CAREER awards: biological sciences, computer/information sciences, education, engineering, geosciences, math/physical sciences, social/behavioral sciences.

Residence hall named for African American pioneers dedicated

By Clara Cox

More than 500 people attended the ceremony to dedicate Peddrew-Yates Residence Hall on campus recently. The building, which is the first at a university to be named for African Americans, honors Irving L. Peddrew III, the university’s first black student, and Charlie L. Yates, its first black graduate.

Naming the building after these two pioneers of desegregation was approved by the Board of Visitors in mid-2002. Formerly known as New Residence Hall West, the building opened in September 1998 and currently accommodates 219 students who participate in the Residential Leadership Community, one of Tech’s 10 theme-housing programs.

“I cannot comprehend the monumental obstacles faced by Mr. Peddrew and Dr. Yates when they were students at Virginia Tech. What I do know, however, is that their sacrifices some 50 years ago have made it possible for African-American students today to not be faced with those same obstacles,” President Charles W. Steger said during the dedication ceremony.

Peddrew enrolled in September 1953 in electrical engineering and was the only black student at Virginia Tech. He worked in the aerospace and fruit industries, for Newport News Shipbuilding, and at Hampton University before his retirement in 1994.

“When I enrolled in Virginia Polytechnic Institute 50 years ago, I never imagined that someday Virginia Tech would name a building for me, and particularly a residence hall. Back then, I wasn’t even allowed to live on campus. So while this is an ironic honor, it is still a great honor and one that my family and I will cherish,” Peddrew said during the dedication ceremony.

(See RESIDENCE on 4)

Department of Music sponsors Alumni Weekend

The Department of Music is sponsoring the second annual Music Education Alumni Weekend April 24-26. Twenty-four alumni are returning to campus to lead seminars, classes, and conduct ensembles for Tech’s undergraduate music-education majors. Featured this year are the 2003 Virginia Teacher of the Year, Douglas Armstrong, *Bella Voce* from Christiansburg Middle School, and the Blacksburg High School Symphonic Band. Armstrong, a 1981 Virginia Tech music education graduate, is the band director at Brooke Point High School in Stafford County. The former drum major of the Marching Virginians was named 2003 Virginia Teacher of the Year by the Council of State School Officers and Scholastic Inc.

Armstrong will give the keynote address for alumni weekend. Lynn Gregory, also a 1981 graduate, directs *Bella Voce*, Christiansburg Middle School’s select choral ensemble. Gregory has been a featured conductor and clinician at Virginia Music Educators Association state conferences, and she also conducts the Montgomery County Boys Choir. The Blacksburg High School Symphonic Band has been designated a Virginia Honor Band by the Virginia Music Educators Association. All seminars and performances are open to the public.

Contact Vernon Burnside in the Department of Music for program information.
BUSINESS

Continued from 1

corporations, give attention to the business and financial management of the corporations, and ensure the corporations are generating support that will benefit the university. With this organizational structure and Ray’s strong leadership skills, we will further advance the strategic agenda of Virginia Tech and the Virginia Research Corridor. Just as important are organization changes in business affairs, administration, and finance.”

Ridenour says that many of the university’s non-academic ventures have required the leadership or involvement of affiliated corporations. “The most visible and successful venture is probably the Corporate Research Center,” Ridenour said.

“It is clear that these affiliated corporations and unique partnerships play a significant and increasingly important role as we continue implementing the university’s plan and climb to our goal to be one of the nation’s leading research universities. Their growth, development, and management support our mission of teaching, research, and outreach.”

Steger said.

The business and administrative re-organization of full-time executive leadership at VTF bolsters institutional efforts to find major new sources of revenue through the related corporations, new business development, and increased involvement at the state and federal levels. According to Ridenour, “These changes establish an organizational structure with strong leadership that will enhance funding for the university and to help to position the university for continued growth toward the top 30. Strong and effective leadership in these areas will have a significant influence on the funding for this university over the next several years.”

Smoak begins full time at the foundation and organizations in July. Ridenour has begun a search for a vice president for business affairs overseeing Environmental Health and Safety; University Architect; Facilities; Capital Projects; University Real Estate Management; and Transportation and Parking. Personnel Services also moves to this vice presidency enabling executive leadership on human resource and management development. The search for the vice president for business affairs is expected to be completed by late summer.

RESIDENCE

Continued from 3

first African-American students were required to live and eat off campus. Yates enrolled a year after Peddrew and completed his undergraduate studies in mechanical engineering in 1958. He graduated with honors and proceeded to Cal Tech, where he earned a master’s degree. He later received a Ph.D. from Johns Hopkins University.

Yates worked at the Johns Hopkins University Applied Physics Laboratory, which conducted research and development work for the U.S. Navy, for 19 years and then returned to his alma mater as an associate professor of mechanical engineering. He left after four years to teach in eastern Virginia but maintained his association with Tech by serving on the Board of Visitors. He returned to Tech in 1987 as a professor of aerospace and ocean engineering and retired in 2000. He currently holds the title of professor emeritus of aerospace and ocean engineering.

The building dedication ceremony was one of the highlights of a year-long series of events marking the 50th anniversary of Peddrew’s enrollment.

NCATE accreditation based on new conceptual framework

Greenberg hired as head men’s basketball coach

Director of Athletics Jim Weaver has announced the hiring of Seth Greenberg as head men’s basketball coach.

“Believe we have found someone who has extensive head basketball coaching experience and who can help us reestablish Virginia Tech back into the Top 25,” said Tom Brown, associate dean of students.

Greenberg was the head coach at Long Beach State University where his overall record was 105-70. In his 13 years as a head coach, Greenberg has an overall record of 213-170.

At South Florida, his teams were 2-0 against Ohio State, had two wins over Texas and won at Pittsburgh during the Panthers’ run to the Sweet 16 in the 2001-02 season.

At South Florida, Greenberg led the Bulls to two National Invitation Tournament appearances and numerous victories in Conference USA play and against nationally-ranked opponents. This past season, the Bulls finished 15-14 overall and 7-9 in the National Division of C-USA. The Bulls defeated Big East member Providence and NCAA Tournament participants Memphis and East Tennessee State, plus NIT participant St. Louis.

“I am very excited about the challenge and opportunity presented at Virginia Tech,” Greenberg said. “Everything is in place to have one of the elite programs in the Big East Conference.”

Greenberg is from a basketball family. His brother, Seth Greenberg, is the head coach at Long Beach State University, where he is the head coach of the women’s basketball team. His father, Bob Greenberg, is a former head coach at Long Beach State and played for the New York Knicks in the 1960s.

To continue to be accredited, Virginia Tech must pass each of the six NCATE standards, although a weakness is allowed if it is addressed appropriately. In the university’s last review, a lack of faculty diversity was cited. Kelly said Virginia Tech’s conceptual framework emphasizes learning for all, with cornerstone of diversity, research, content, and technology.

Meeting NCATE’s high standards is critical, Kelly said. Title II of the Higher Education Act establishes federal accountability requirements for institutions and states on teacher preparation and licensing. If 70 percent of an institution’s teacher graduates do not pass their licensure exams, the entire faculty could lose all federal funding.

NCATE is expected to issue its assessment of the professional-education programs in October, 2003.

UNIVERSITY

Continued from 1

engineering, scientific, and social science, creative, and scholarly fields.

In the current fiscal year, which began July 1, 2002, research contracts and grants again show growth from the previous fiscal year. Awards don’t translate directly into expenditures for the same year, since many are paid over several years.

The 2001 ranking of other Virginia universities are: (78) University of Virginia, $149.5 million; (104) Virginia Commonwealth, $99.2 million; (158) William and Mary, $35.8 million; (162) George Mason University, $32.8 million; (183) Eastern Virginia Medical College, $26.2 million; (186) Old Dominion University, $24.6 million.

The ranking table (B32) and source of funds table (B35) are available at www.nsf.gov/sbe/srs/stats.htm #43. Other National Science Foundation, Division of Science Resources Statistics data are available at www.nsf.gov/sbe/srs/stats.htm.