

SPECTRUM



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

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TODAY'S EDITION

See page 5 for Staff
Appreciation Day
information.

A Letter from President Charles Steger regarding Budget and Reinvestment Decisions

Dear members of the Virginia Tech community:

The time has come for us to absorb the full impact of the budget reductions and begin the process of reinvestment. I have been impressed by the efforts of the entire university community to work together to manage this situation as well as possible. We are determined to stay focused on our strategic plan—which was developed with university-wide participation and was endorsed by the Board of Visitors—so that we can take full advantage of the opportunities we create for ourselves. The unpredictability of state funding reinforces the need to leverage our resources with increased attention to federal, foundation and private support so that we can attain the margin of excellence we seek. The critical importance of our next capital campaign looms even larger. This letter provides a summary of the budget and reinvestment recommendations I am prepared to support. As of Wednesday, May 1, Provost McNamee has provided additional information on the restructuring plans. (See article on page 7.)

Budget Reduction Overview

All of the college, administrative, and affiliated units reporting to the university provost and vice president for academic affairs, the executive vice president and chief operating officer, and the president have submitted comprehensive budget-reduction plans consistent with a 6-percent permanent reduction in Education and General funding (Agency 208) and a 7-percent reduction in Cooperative Extension/Experiment Station funding (Agency 229) for the 2002-03 fiscal year. In addition, all units have submitted plans for an additional 1-percent reduction in 2003-04. Based on the final version of the state budget for 2002-2003 and the projected revenues from a 9-percent tuition increase, the net permanent budget reduction for Virginia Tech this coming year is \$25 million, representing approximately 9 percent of General Fund revenues. The participation of all units of the university in the reduction plan is enabling us to keep the 208 reductions as low as possible. As president, I have worked closely with Provost Mark McNamee and Executive Vice President Minnis Ridenour to forge a comprehensive strategy for handling this substantial budget reduction.

The submitted reduction plans have been analyzed by the senior administration to assure programmatic and financial completeness, and
(See LETTER on 6)

Tech ranked among most innovative universities

By Jeanne M. Garon

Among all universities in the United States, Virginia Tech has one of the most comprehensive and successful programs to support state and local economic development, according to a new Southern Growth Policies Board study.

The study, *Innovation U: New University Roles in a Knowledge Economy*, profiles the economic-development and technology-transfer activities of 12 exemplary universities. "Virginia Tech," it reports, "has been extraordinarily aggressive and effective in reaching communities and business partners throughout its region, the state, nationally, and internationally."

The high ranking reflects Tech's effort to fulfill its economic-development mission, President Charles Steger said. "Outreach and economic development have long been vital parts of Virginia Tech's mission. The university has actively pursued partnerships with industry, governmental agencies, and other organizations to fulfill this mission. The Southern Growth study shows that Tech's collaborations are producing an impressive return for Virginia taxpayers."

C. Clark Jones, vice provost for outreach, said "the university is deeply honored to have made the short-list of America's most successful universities in terms of its outreach, economic-development, and technology-transfer practices. Virginia Tech and its peer institutions are going the extra mile in equipping businesses, local and state governments, communities, and individuals with the skills, services, and intellectual properties they need to be competitive in the new knowledge economy."

The foundation for the study, which was funded in part by the National Science Foundation, was the articulation of best practices in areas including industry-research partnerships, extension and technical assistance, entrepreneurial development, partnerships with economic-development organizations, and faculty culture and rewards.

Southern Growth asked 40 economic-development practitioners, researchers, and experts from across the nation to rank U.S. universities in terms of best practices. The result was a list of a dozen universities rated the best in the nation at serving as "engines of growth for their local and state economies." Virginia Tech is joined on the list by Stanford University, Purdue University, Texas A&M University, Carnegie Mellon University, University of California—San Diego, Georgia Institute of Technology, University of Utah, University of Wisconsin, Pennsylvania State University, Ohio State University, and North Carolina State University.

"Universities now play a critical role in

(See TECH on 7)

Commencement activities begin next week

By Lori Gavaghan,

University Relations intern

Mark R. Warner, the 69th governor of Virginia, will speak at Virginia Tech's 130th Commencement in Lane Stadium on Saturday, May 11. Warner will continue a more-than-30-year Virginia Tech tradition in which the university has had the governor speak at its Commencement ceremonies.

"The governor represents the university's motto 'Ut Prosim,' (That I May Serve), through his years of service and dedication to the commonwealth. The class of 2002 is sure to learn much from his address," said President Charles Steger.

Warner is dedicated to assisting the under-served throughout Virginia, and is the

founding chair of the Virginia Health Care Foundation, which provides health care to more than 425,000 Virginians in rural and urban areas. A philanthropist and entrepreneur, Warner has helped employ over 15,000 workers through more than 50 businesses that have started by using Columbia Capital Corporation, a technology-venture-capital fund in Alexandria, which Warner co-founded.

There will be 3,597 undergraduate candidates receiving their diplomas on Saturday. On Friday, May 10, preceding the undergraduate Commencement, the Graduate School will hold its Commencement ceremony in Cassell Coliseum where 1,069 graduate students, 869 master's students, 181 Ph.D. students, 18

ED.D.'s, and one CAG will receive their diplomas.

Lucinda Roy will be the keynote speaker for the graduate Commencement. Roy is an alumni distinguished professor and chair of the English Department, as well as the director of creative writing. She is also the co-founder of the Service Learning program at the university. She served as an associate dean in the College of Arts and Sciences from 1993 to 1996 and was the Gloria D. Smith professor in black studies from 1997 to 1999. Roy frequently presents programs throughout the country on creative writing, higher education, and diversity and has authored a number of successful grants in support of on-line course development and diversity initiatives.

Torgersen graduate-student awards presented

By Liz Crumbley

Six students from the College of Engineering have received 2002 Paul E. Torgersen Graduate Student Research Excellence awards. The annual awards were established in 1990 by the college's Graduate Student Committee to honor Torgersen, former dean of the college and president of Virginia Tech.

Three master's-degree candidates received awards. Eric Ruggiero, a student in mechanical engineering (ME) under the advisement of Professor Daniel Inman, won first place in this category for his paper, "Active Dynamic Analysis and Vibration Control of Gossamer Structures Using Smart Materials."

Second place in the M.S. category went to ME student Mary Virginia Jernigan, an advisee of assistant professor Stefan Duma,

for her paper "Statistical Analysis and Computation Modeling of Injuries in Automobile Crashes." Mohammad Younis of engineering science and mechanics (ESM), advised by Professor Ali Nayfeh, won third place for "Investigation of the Mechanical Behavior of Microbeam-Based MEMS Devices."

Joseph South of materials science and engineering, an advisee of Professor Kenneth Reifsnider, received the first place award among Ph.D. candidates for "Mechanical Properties and Durability of Natural Rubber Compounds and Composites."

The second-place award in the Ph.D. category went to Tozer Bandorawalla of ESM, advised by Assistant Professor Scott Case, for "Micromechanics-Based Strength and Lifetime Prediction of Polymer Composites." Jacob George of aerospace and ocean engineering, an

advisee of Professor Roger Simpson, won third place for "Structure of Three-Dimensional Turbulent Boundary Layers with Sparsely Distributed Roughness."

Papers for the competition were submitted by graduate students from throughout the college and award winners were selected by a panel of six judges: Fernando Goncalves, a post-master's candidate in ME; Michael Mensch, M.S. candidate in chemical engineering; Theresa Wynn, Ph.D. candidate in biological systems engineering; William Knocke, department head of civil and environmental engineering; Demetri Telionis, professor of ESM; and Robert Williges, professor of industrial and systems engineering.

The winners, who received cash awards totaling \$2,050, presented their papers to colleagues on April 3.

NEWSMAKERS

Virginia Tech faculty and staff members and students are often the subject of significant national and state-wide news coverage. To better inform the university community about these accomplishments, the Office of University Relations has compiled this report. This report excludes coverage in the Roanoke news-media market. For more information about the articles mentioned, call Julie Kane, public-relations manager, at 1-9934, or contact your college public relations office.

Now and Then, The Appalachian Magazine (winter 2002): Powell River Project director and crop and soil environmental sciences Extension specialist, **Carl Zipper**, wrote the article "Back to the Coal Mines?" The article explores the Bush energy policy and its relationship to Appalachia's energy reserves. The article discusses the Powell River Project and highlights the reforestation of reclaimed mined lands by forestry Professor **James Burger**.

Richmond Times Dispatch (Dec. 10): **Andrew Swiger**, dean of the College of Agriculture and Life Sciences, was quoted in an article about Joseph Coffey, a retired economist and a promoter of farm research.

Virginia Public Radio (week of Dec. 22): History Professor **William C. Davis** discussed the last days of the Confederate Government on "With Good Reason," a half-hour public affairs program airing on all of Virginia's public radio stations.

Richmond Times Dispatch (Dec. 25): Physics Professor **Massimiliano Di Ventra** was quoted in an article about working circuits crafted from individual molecules.

"Innerviews," (a nationally syndicated radio show) (Dec. 30): **Chris Neck**, associate professor of management, discussed self-leadership.

Ladies Home Journal (Jan. 2002): **Kathleen Parrott**, associate professor in near environments, was quoted in "Take off your shoes in the house...." The article describes how carpets act as a chemical sink.

Virginia Public Radio (week of Jan. 6): History Professor **Richard Hirsh** and near environments assistant professor **Irene Leech**, president of the Virginia Citizens Consumer Council, offered their predictions on deregulation of the electric utility industry in Virginia on "With Good Reason."

Time magazine (Jan. 21): Human-development Professor **Rosemary Blieszner** was quoted in a story called the "Buddy System" which examined the importance of friendships in retirement.

Virginia Public Radio (week of Jan. 27): Mechanical-engineering Professor **Doug Nelson** offered a primer on fuel cell technology on "With Good Reason."

Chemical & Engineering News (Jan. 28 issue): The magazine carried an article about chemistry Professor Harry Dorn entitled "Exotic fullerene gets more useful."

NewsProNet (Feb. 2002): Electrical and computer engineering professors **Charles Bostian** and **Scott Midkiff** discussed an emergency wireless-communications system being developed by the Center for Wireless Technology. NewsProNet distributes science news to 70 television stations across the country.

USA Today (Mar. 13): **Robert Lang**, director of the Virginia Tech Metropolitan Institute, was quoted in a cover story, "Mega-mansions upside: They help reduce suburban sprawl."

Chronicle of Higher Education (March 15): **Randy Marchany**, computer-systems senior engineer, is featured in an article on "The Growing Vulnerability of Campus Networks."

Amelia (Va.) Journal (March 20): An article was included about the election of civil-and-environmental-engineering Professor **Thomas Murray** to the National Academy of Engineering.

Mechanical Engineering magazine (April issue): **Walter O'Brien**, head of the mechanical-engineering department, is quoted in a feature article about programs in which engineering alumni in industry work with their alma maters to bolster recruitment, cooperative education and research.

SPACE.com (April 10): **Craig Woolsey**, assistant professor in aerospace and ocean engineering discussed his research on underwater and space vehicles of the future.

U.S. News & World Report (Best Graduate School edition) (April 15): **Joseph Merola**, acting dean of the Graduate School, was quoted in the article "Choosing Your Path."

Renewable Energy Today (April): An article on physics Professor **Randy Heflin's** photo-voltaic research was included in the magazine's science and technology section.

Washington Post (April 19): This issue contained an article about the research by **Marc Edwards** of civil and environmental engineering. Edwards, cited by the *Post* as "a nationally recognized expert on copper corrosion," has been investigating leaks in copper piping for the Washington Suburban Sanitary Commission.

The Oliver North Show (radio) (April 25): History Professor and Director of programs for the Virginia Center for Civil War Studies, **Jack Davis**, discussed his new book *Look Away! A History of the Confederate States of America*.

ACHEEVERS

The Southern Extension Forestry Resources Division of the Cooperative Extension Service has given **Dylan Jenkins**, Extension specialist in the department of forestry, an Excellence Award in the Computer Software/Web Site category for his *Virginia Forest Landowner Update Website*: <http://www.cnr.vt.edu/forestupdate>.

Southern Regional Extension Forester William Hubbard said, "More and more we see that forestry and natural-resources programming is critical to the Extension mission of our land-grant institutions. The *Virginia Forest Landowner Update Website* is an excellent source of management information for Virginia forest landowners."

The expanded web site contains numerous tools designed to guide landowners toward education programs and provide sources of professional assistance in their local area. New sections are added frequently, the most recent being "Ask The Forester," where forest landowners submit questions and receive responses on line to their forest-management questions.

Another section, the *Landowner Assistance Finder* provides a drop-down listing of contact information for all state and federal natural-resource agencies for every county in Virginia. In summer 2002, the *Forest Landowner Mentor Network* will debut, listing Virginia's outstanding veteran landowners who have agreed to provide peer-to-peer advice and guidance on forest management to new and inexperienced landowners in their region.

Jenkins coordinates the Virginia Forest Landowner Education Program and is current chair of the Virginia Society of American Foresters.

Sam Easterling of civil and environmental engineering received the 2002 T.R. Higgins Lectureship Award from the American Institute of Steel Construction (AISC). The Higgins award—the most prestigious national recognition offered for papers related to structural-steel design—is presented annually to a lecturer and author whose technical paper has made an outstanding contribution to the engineering literature on fabricated

structural steel. The 2002 awards jurists cited Easterling's paper, "Developments in Long-Span Composite Slabs," for its potential to lead to new economies in the design and construction of steel-framed buildings.

Richard E. Sorensen, Pamplin College of Business dean, has been elected to the Board of Directors of AACSB International. AACSB, the Association to Advance Collegiate Schools of Business, is a not-for-profit corporation that promotes higher education in business, and is the leading accrediting agency for bachelor's, master's, and doctoral-degree programs in business administration and accounting. Sorensen will serve a three-year term, starting July 1. He will continue to chair the AACSB's Business Accreditation Committee. At the AACSB's annual meeting this month, he gave a presentation at a workshop, "Preparing Managers for the Global Capitalistic Economy."

John Ney, fisheries and wildlife sciences professor in the College of Natural Resources at Virginia Tech, gave the keynote speech at the recent 50th Anniversary Meeting of the Southern Division of the American Fisheries Society (SDAFS) in Little Rock, Ark.

His presentation, "Our Future's Ahead of Us: Evolution of Fisheries Management in the 21st Century," focused on such challenges as changing human attitudes and demographics, climate warming, and invasive species, as well as the emerging opportunities to meet those challenges through new technology, updated management paradigms, and integrated teamwork. The SDAFS represents 2,800 fisheries scientists in 23 states.

Garland Gray Professor of Forestry **Harry Haney**, in the College of Natural Resources, was elected president-elect for the Forest Landowners Association (FLA) in April of 2001. The term extends two years before Haney is titled the new president of the 11,000-member body.

Before his election, Haney served on the Board of Directors for a number of years. He also authors the column on *Timber Tax*

Issues that appears bi-monthly in the *Forest Landowner* magazine. Haney is a national expert on forest taxation and forest-investment analysis.

Roby Robinson has completed all requirements for certification as a certified safety professional (CSP). The certification is awarded to individuals who meet academic and professional safety-experience requirements and have passed a comprehensive examination. The examination covers engineering and management aspects of safety, applied sciences, legal and regulatory matters, and other safety-related topics. Robinson works as an occupational-safety compliance officer with Environmental, Health and Safety Services.

Chester L. Foy, professor of plant physiology and weed science, has been awarded a lifetime membership in the Association of Formulation Chemists. The association, with an international membership, recognized Foy's pioneering efforts in organizing and supporting the association, and his many research contributions in the areas of adjuvants for agrichemicals. Foy was also appointed a founding trustee of the organization, which grew out of Formulations Forum, a 1994 international scientific meeting of which he was a co-organizer. He also co-edited two volumes resulting from the 1994 forum and the subsequent 1997 forum.

The Department of Entomology recognized **Tree Dellinger**, a doctoral student with **Rod Youngman**, and **Laura Barbani**, a master's student supervised by **Rick Fell** for outstanding academic performance during the current academic year. Two other entomology students who finished their doctoral degrees in 2001 were winners of the Sigma Xi award for doctoral research this year. **Jarrod Leland** completed his doctorate in October and is working for the U.S. Department of Agriculture in Mississippi. **Riella Zilahi-Balogh** finished her work in November and is currently in a post-doctoral position with the Department of Entomology.

VIRGINIA TECH RECYCLING

Year's Recycling Efforts Updated

By Larry Bechtel,

Virginia Tech Recycling coordinator

Recent news articles in the *Roanoke Times* "Current" section have reported on changes in the trash collection contract for the Town of Blacksburg, as well as anticipated changes in the recycling program.

However, changes in this program are not related to the Virginia Tech Recycling (VTR), which continues to operate day by day, as it has for 11 years. Each morning at 7 a.m., two recycling collection crews leave the Grounds Building, one to collect corrugated cardboard, and one to collect paper (sorted office paper/glossy magazines/catalogs/newspapers). By the time these crews arrive at their first stops, custodial staff members will already have collected recyclable materials in buildings and transported them to designated locations.

The corrugated-cardboard collection crew, using a 16-cubic-yard rear-load packer truck,

picks up cardboard from 47 scheduled locations per day, on average, with six of these locations picked up twice a day. The crew collects, on average, approximately 42,500 pounds per month, for a total of slightly over half-a-million pounds for calendar year 2001, and a landfill-disposal-fee-avoidance savings of \$12,510.

The paper crew (the most labor-intensive of the recycling crews), using a modified pickup truck, collects paper from 22 scheduled locations per day, on average, with a varying number of call-in pick-up requests. The crew collects approximately 40,000 pounds per month. Supplemented by other pickups, especially shredded paper bales from Records Management, and the 10,000-12,000 pounds of scrap paper from University Printing Services, monthly collection of paper averages approximately 175,600 pounds during fall and spring semesters, for an annual total of 878,020, and a

landfill-disposal-fee-avoidance savings of \$21,500.

In addition to these crews, VTR operates a twice-weekly collection of commingled containers (aluminum cans, steel cans, glass bottles, plastic bottles numbers 1 and 2) from 44 locations. Supplemented by special-request pickups, donations by individuals, and collections in the dining halls by culinary staff members, collection of commingled containers averages about 5,900 pounds monthly, or 70,680 pounds for calendar year 2001, and a landfill-disposal-fee-avoidance savings of \$1,732.

Total campus recycling by weight, for calendar year 2001, was 3,738,380 pounds. This number includes, in addition to the items described above, scrap metals, yard waste (leaves and brush), and a variety of materials such as used oil and oil filters, auto batteries, and fluorescent bulbs, handled "in house" by particular shops or departments and in some

cases monitored by the environmental health and safety office. The recycling total for 2001 was 24.9 percent of the university's total "solid-waste stream."

In addition to operating three collection routes, and responding to a wide array of special pickups, VTR also receives regular requests, from individuals and offices, for new or expanded services. These services may include bins, carts, labels, various informational material, or brief presentations outlining the program and going over the campus recycling guidelines. The success of the recycling program depends upon the continuing interest—and participation—by hundreds of faculty and staff members and students, on a daily basis.

For more information, to comment on the recycling program, or to receive a copy of the 2001 recycling report, contact the VTR office at 1-9915 or lbechtel@vt.edu.

Retirees association sponsors scholarship

The Virginia Tech Retirees Association, a voluntary organization of retired Virginia Tech faculty and staff members, their spouses and the spouses of deceased retirees, has agreed to sponsor a \$500 Employees' Spouse and Dependent Scholarship award.

The purpose of the scholarship is to assist families of Virginia Tech full-time employees in supporting their dependents and spouses as students at Virginia Tech. Scholarships will be equally divided between need- and merit-based awards for freshman or entering transfer students.

Those who qualify for this scholarship must be a dependent or spouse of a salaried full-time staff or faculty members of Virginia Tech; an incoming freshmen or entering transfer student in a baccalaureate degree program, and enrolled full time at Virginia Tech.

The scholarships will enable more dependents and spouses of employees to attend Virginia Tech. In the first year (2000) of this program two scholarships of \$500 each were awarded and four were awarded in 2001.

(See *RETIREES* on 7)

Virginia Tech inventions and creations receive patents

By Susan Trulove

Virginia Tech faculty members, students, and staff members received 15 patents, including one plant patent, plus eight plant-variety protection patents during 2001. The recipients will be honored by the university and Virginia Tech Intellectual Properties Inc. (VTIP) at a reception at the German Club on May 8.

"We have a lot of confidence in these patents," said Mike Martin, executive vice president of VTIP. "And it is a pleasure to recognize the individuals whose discoveries have contributed to a successful 17-year technology-transfer program."

Fiscal year 2001 has also been a success in terms of returns from intellectual properties. Royalties topped \$2 million for the first time—a 33-percent increase over 2000.

President Charles Steger said "The patents awarded to Virginia Tech faculty members, students, and staff members represent a significant resource for economic development and research."

The 2001 patents are evenly split between technology and life sciences.

TECHNOLOGIES

Chemistry Professor Harry Dorn and former post-doctoral associate Steven Stevenson, who is now with Luna Innovations, received a patent for a new family of molecules—metal filled fullerenes—that have the potential to be the backbone of many nanotechnology applications. The patent, "Endohedral Metallofullerenes and Method for Making the Same" (No. 6,303,760) describes trimetallic nitride endohedral metallofullerenes and their preparation. A nitrogen atom anchors three metal atoms, which are then enclosed inside a fullerene. Luna Innovations has licensed the technology.

Hosadurga Shobha, post-doctoral associate; Venkat Sekharipuram, Ph.D. graduate now at Johnson & Johnson; Chemistry Professor James McGrath, and Atul Bhatnagar of Johnson & Johnson, received a patent for inventing "High Refractive Index Thermoplastic Polyphosphonates" (No. 6,288,210), which has been licensed to Johnson & Johnson Vision Products. These melt processable polymers are particularly useful for optical and ophthalmic parts, such as lenses, prepared by injection molding.

Ph.D. graduate Kunrong Wang and Electrical Engineering Professor Fred Lee, who is the director of Center for Power Electronic Systems (CPES), received a patent for a "Soft-Switched Quasi-Single-Stage (QSS) Bi-Directional Inverter/Charger" (No. 6,330,170) that converts AC power to DC power and vice versa.

Ph.D. graduate Boris Davidson and pro-

fessor of electrical and computer engineering Charles Bostian received a patent for "One-Way Packet Communication Channel with Retransmissions" (No. 6,246,693). The patent is for a random access technique designed for any remote transmitter that sends messages infrequently but requires that such messages get through within a few seconds of initial transmission.

Wayne Durham, associate professor of aerospace and ocean engineering, received a patent for "Computationally Efficient Control Allocation" (No. 6,278,908). The patent's primary application is to modern military tactical aircraft that must be capable of rapid maneuvering over a wide range of flight conditions.

Seshu Desu, a former professor of electrical engineering and materials science and engineering, and John Senkevich, a former student, invented a "Near-Room Temperature Thermal Chemical Vapor Deposition of Oxide Films" (Patent No. 6,316,055), which has been licensed to Quester Technologies Inc. This invention discloses methods for depositing oxide dielectric materials using a near room temperature thermal chemical vapor deposition process.

LIFE SCIENCES

William Velander, professor of chemical engineering, and Carolyn Orthner of the American Red Cross received patent number 6,194,552 for "Immunosorbents With Developed Binding Efficiency and Method of Manufacture."

Velander and the late Henryk Lubon and William Drohan of the American Red Cross received patent number 6,255,554 for "Transgenic Non-Human Mammals Expressing Human Coagulation Factor VIII and Von Willebrand Factor." Factor VIII is involved in hemophilia, a relatively rare disease, while Von Willebrand Disease is the most frequent of the blood clotting diseases.

Velander, Lubon, and Drohan, along with Lothar Hennighausen, senior NIH investigator, also received patent number 6,262,336 for "Expression of a Heterologous Protein C in Mammary Tissue of Transgenic Animals Using a Long Whey Acidic Protein Promoter." Once again, a DNA sequence regulates the expression of human Protein C, an anticoagulant, in a transgenic animal.

Thomas J. Inzana, professor of biomedical sciences and pathobiology in the College of Veterinary Medicine, and former graduate student Christine Ward received a patent for "Recombinant Vaccine for Diseases Caused by Encapsulated Organisms" (No. 6,326,001), which has been licensed to American Home Products (now Wyeth Home Products). The patent is for vaccines to prevent diseases caused

by normally encapsulated organisms.

Elizabeth Grabau, associate professor of plant pathology, physiology, and weed science, and former graduate student Carla Hegeman received a patent for "Soybean Phytase and Nucleic Acid Encoding the Same" (No. 6,303,766). To solve the problem of non-ruminant animals such as poultry and swine being unable to efficiently absorb phytate phosphorus in soybean meal, Grabau will introduce phytase genes directly into soybean for expression in the seed.

A "Seaweed Supplement Diet for Enhancing Immune Response in Mammals and Poultry" earned a patent (No. 6,312,709) for Vivien Gore Allen, professor of plant and soil science at Texas Tech, formerly at Virginia Tech; Kevin Pond, chair of animal science and food technology at Texas Tech; Korinn Saker, assistant professor of large animal clinical sciences in the Virginia/Maryland College of Veterinary Medicine, and Joseph Fontenot, professor of animal sciences at Virginia Tech. They developed TASCO™, a proprietary seaweed-based product.

Lester Casida, a retired professor of microbiology at Penn State, Virginia Tech biology professor Joseph Falkinham III, and research associate Cody Cain have received a patent for a novel predator bacterium *Burkholderia casidae* (No. 6,319,497). The bacterium would be used in antimicrobial compounds to control microbial diseases of plants.

Harry Jan Swartz, small fruits breeder at the University of Maryland, College Park; Joseph Fiola, small fruits specialist at the University of Maryland's Western Maryland Research and Education Center; Herbert Stiles, associate professor with Virginia Tech's Southern Piedmont Agricultural Research and Extension Center in Blackstone, and Brian R. Smith, small fruit breeder at the University of Wisconsin at River Falls, received a plant patent for a red raspberry variety named Josephine (No. PP12,173). Josephine joins several other varieties developed by these researchers which ripen early.

Six varieties of wheat, developed by Carl Griffey, associate professor of crop and soil environmental sciences, and two varieties of soybeans, developed by Glenn Buss, professor of crop and soil environmental sciences, received plant variety protection (PVP), which provides intellectual-property protection for plant varieties that reproduce with true-breeding seed (as opposed to a plant patent, which protects any distinct and new variety of plant produced without the use of genetic seeds).

For more detailed information on these patents, go to <http://www.research.vt.edu/edge/2001patents.html>.



VIRGINIA POLYTECHNIC INSTITUTE
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ACTIVITIES

EVENTS

Friday, 3

Exams Begin.

Art Exhibit, noon to 5 p.m., Armory Art Gallery: Special Student Gallery Projects.

Saturday, 4

YMCA Hike, 10 a.m., YMCA parking lot.

Sunday, 5

SOTA Event, 8 p.m., Squires Recital Salon: Student Horn Ensemble.

Monday, 6

University Council, 3 to 5 p.m., 1045 Pamplin.

Wednesday, 8

Exams End.

"With Good Reason," 7 p.m., WVTF.

Thursday, 9

Senior Day.

Friday, 10

Senior Day.

International Graduation Reception, 11 a.m., Cranwell

Center.

VTCC Commissioning, 3 p.m. DBHCC auditorium.

Graduate Commencement, 4:30 p.m., Cassell Coliseum.

VMRCVM Graduation, 7 p.m., Squires Commonwealth Ballroom.

New Virginians Commencement Show, 8 p.m., Squires Haymarket Theatre.

SEMINAR

Wednesday, 8

Human Development, 7 p.m., Wallace atrium: Shirley S. Travis, UNC-Charlotte.

BULLETINS

Forest-finance course slated for June

The Department of Forestry in the College of Natural Resources, with the Division of Continuing Education and the Society of American Foresters, will offer forest-land managers a course in "Forest Finance" to be held June 12-13 in the Donaldson Brown Hotel and Conference Center.

The course will cover forestry-finance basics and case studies. Sessions will focus on the proper techniques for analyzing long-term forestry opportunities and include practical exercises in problem-solving and computer-software training to sharpen skills for hands-on solutions of typical forestry problems. Lectures will deal with income-tax adjustments, adjustments for inflation and real price changes, and risk and adjustments in investment analysis. The basic course provides six hours of category 1 continuing-forestry-education (CFE) credits, and the applications and case-analysis course provides 12.

The course is designed for forest-land managers, consultants, service foresters, land-use planners, and other professionals who evaluate forestry and natural-resources investment opportunities, as well as those who are concerned

with the economic efficiency of forestry operations.

Harry L. Haney Jr., Garland Gray professor of forestry and forest-management economics professor, will teach the course. He has experience in teaching, research, and outreach, plus practical experience consulting on a national scale.

Registration fee for the basic course is \$175, and the fee for the applications and case analysis session is \$295. The two course module is \$425. Registration deadline is May 28. For more information about the course, contact Haney at 1-5212 or e-mail hhaney@vt.edu. For more information about registration, call 1-5182 or register on line at <http://www.conted.vt.edu/forfin.htm>.

Alzheimer's conference scheduled for Roanoke

An Alzheimer's Education Conference will be held June 27 at the Hotel Roanoke and Conference Center in Roanoke.

The theme of the conference is "Creative Caregiving, Together We Can Make a Difference." This is a forum for educational information on research updates, medications, and care-giving strategies for persons with Alzheimer's disease and related dementia in Central and Western Virginia. The focus on creative

interventions will offer caregivers unique and diverse approaches in bringing quality care to those they serve.

Topics include the Montessori approach to persons with dementia, rural care-giving, horticulture as a therapeutic intervention, the Eden alternative for long-term care, dementia care mapping, medical updates and more. The keynote speaker, Carmen Leal, is author of *Joy Through Life Lessons* and a former care giver. The conference offers two tracks, one for professionals, and one for family caregivers and is open to anyone with an interest in Alzheimer's disease. Exhibitor tables will be on display throughout the day, including Virginia Tech's Adult Day Services.

The conference is a collaboration of the Alzheimer's Association Central and Western Virginia Chapter and Virginia Tech. Family care givers who request financial assistance to attend or those with questions about the conference should contact the Central and Western Virginia Chapter Office at 434-973-6122.

To register, contact Jane Todd at the Division of Continuing Education at 1-2014, (janetodd@vt.edu) or go to web site <http://www.conted.vt.edu/creativecare.htm>.

Wireless items exhibit to be dedicated at Torgersen

By Karen Gilbert

A one-of-a-kind display of wireless communications items will be on display in Torgersen Hall during a dedication ceremony on Monday, May 6 at 11:30 a.m.

The memorial exhibit honoring Al Gross, a wireless pioneer, will chronicle the advances made in the technology. Ethel Gross will attend the ceremony in honor of her late husband and his many inventions.

Gross played a major role in inventing miniaturized portable communications. In 1938, he invented the walkie-talkie. In 1949, Gross invented the telephone pager. His other inventions include the basic technology of cordless and cellular phones. He developed the circuitry that opened the way to personal pocket paging systems and patented precursors of today's cell phone and cordless pager.

This historical exhibit will be permanently displayed and open to the public in the Torgersen bridge. The exhibit was designed and fabricated by Tom Butterfield, director of the Perspective Gallery.

The display cabinet will house the original walkie-talkie inventions, the tubes and designs Gross used, his slide rule and Smith Chart, his W8PAL log book, examples of first-generation transistors, paging receivers, antennas and other devices from his workbench. Even the wrist radio that Chester Gould used to generate the idea for the Dick Tracy cartoon will be part of the display. To compliment the exhibit, the original writings of Gross are being preserved by special collections in Newman Library.

The exhibit will honor three other wireless pioneers—with color photos of Fred Link, Stuart Meyer and Donald Bishop taken in 1992. In the

summer of 1991, these men came to Virginia Tech for the first time, to put on a "wireless pioneers" session. This was the first event sponsored by the Mobile and Portable Radio Group (MPRG).

The exhibit will contain educational descriptions of the various inventions and technologies used to create the walkie-talkie, as well as descriptions of amateur radio, the Radio Club of America, and a sidebar that describes the important role the club plays in preserving history, encouraging discovery and supporting youth interested in the study of radio communications with scholarships.

For more information, contact Rappaport (wireless@vt.edu) or the head librarian for special collections at Newman Library, Gail McMillan (gailmac@vt.edu).

Recirculating aquaculture conference slated

By Lynn Davis

The Fourth International Recirculating Aquaculture Conference is coming this summer to the Hotel Roanoke and Conference Center on July 18-21.

This year's conference will feature symposiums on aquaculture nutrition, waste management of solid and liquid wastes from aquaculture facilities, fish health, emerging and endangered species, genetics and physiology, aquaria, ornamentals, bait fish, economics and business management, and an education and outreach program.

The symposium will also include many sessions on aquaculture systems—the use of recruiting technologies in marine shrimp culture, a commercial recirculating system designed to establish detailed information regarding individual design and operation approaches, and other systems used to stabilize culture conditions for an increasing variety of aquatic organisms.

The conference will conclude with a special session conducted by the Freshwater Institute to review applications and issues with recirculating systems used to produce cold-water fish.

The conference is designed for individuals in industry, government, and academia, who are involved with recirculating aquaculture. Past participants have included 1,500 attendees from the U.S., and other from as many as 30 countries around the world. This year's conference will again feature leading experts in

(See *RECIRCULATING* on 7)

Special traffic update for move-out, Commencement

The student move-out from May 7 through 12 is expected to create severe traffic congestion on Washington Street, Kent Street, and Old Turner Street.

On May 7 and 8, traffic on Washington Street will be one way, moving east-bound towards Kent Street. The Aggie Quad parking lot will have the side of the lot closest to Slusher Tower reserved for student move-out and all of Dietrick parking lot will be reserved for student move-out. Additionally, the following areas will have timed spaces for student move-out: Washington Street, Kent Street, Owens lot, Engel lot, Shultz lot, Coliseum lot, Tennis Court lot, Old Turner Street, and the south side of the Drillfield (the side closest to War Memorial Gym).

From May 7 through 12 these areas will be extremely difficult to drive through and parking will be strictly limited. Faculty and staff members are encouraged to avoid these areas if possible and to park in unaffected lots such as the large lot behind Litton-Reaves and the section of the large commuter lot below Durham Hall.

During Commencement activities, the Coliseum lot will be reserved on Friday, May 10 and Saturday, May 11 for handicap, special-needs, and stage-party parking. The Tennis Court lot (east of Cassell Coliseum) will be reserved for stage-party parking on Friday, May 10 and Saturday, May 11.

BT Commencement Shuttle service will begin Friday, May 10, at 1 p.m. There will be

two shuttles available from 1 to 5 p.m., and only one available from 5 p.m. to midnight. There will be one shuttle available on Saturday, May 11, from 1 to 5 p.m., and one shuttle available on Sunday, May 12, from 8 to 11 a.m. A para-transit shuttle will be available on an on-call basis.

The Commencement Shuttle stops are at Washington Street beside Cochrane Hall, West Campus Drive across from Engel Hall, corner of Main Campbell Hall, archway between Eggleston, Owens Parking lot, Washington Street/Miles, Litton Reaves parking lot, and Slusher Tower lot.

Contact Parking Services at 1-3200 (parking@vt.edu) for more information.

STAFF APPRECIATION DAY 2002

10th Anniversary Celebration—May 15

The university would like to express its thanks to the members of our classified staff and non-student wage employees who play such a vital role at Virginia Tech. Please join your friends at Rector Field House on **Wednesday, May 15** between 10 a.m. and 3 p.m. to participate in team events, go on campus tours and enjoy a free picnic lunch.

CAMPUS TOURS / SCHEDULE

Register now for the tour of your choice. Tickets are required due to space limitations. Send an email to mpatty@vt.edu or call 231-7111 to register. Length of tour includes walking and transportation time. **Registration Deadline:** Friday, May 10

Smart Road

10:30 a.m. 80 spaces—1 1/2 hours
1:30 p.m. 80 spaces—1 1/2 hours

National Weather Center

10:15 a.m. 10 spaces—1 hour
11:15 a.m. 10 spaces—1 hour
1:30 p.m. 10 spaces—1 hour

Historical Walk with Doug Martin

10:15 a.m. 25 spaces—45 minutes

Horticulture Gardens

10:30 a.m. 15 spaces—45 minutes
11:15 a.m. 15 spaces—45 minutes
1:30 p.m. 15 spaces—45 minutes

Merryman Center / Legends Hall

10:15 a.m. 15 spaces—45 minutes
10:45 a.m. 15 spaces—45 minutes
11:15 a.m. 15 spaces—45 minutes

Veterinary Medicine Teaching Hospital

10:30 a.m. 20 spaces—1 1/2 hours
1:30 p.m. 20 spaces—1 1/2 hours

CommonHealth Fitness Walk

1:30 p.m. Open—30 minutes

The Grove

10:15 a.m. 15 spaces—45 minutes
10:45 a.m. 15 spaces—45 minutes
11:15 a.m. 15 spaces—45 minutes



Picnic Lunch

11 a.m. to 1 p.m.
Hot Dogs, Veggie Burgers, Grilled Chicken, Barbecue, Assorted Salads and more!



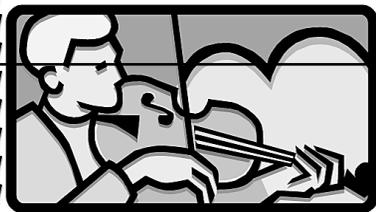
For details regarding the entire schedule of the day's events, refer to the May 3rd Spectrum. You may also visit the Staff Senate website at www.staffsenate.vt.edu or the Spectrum website at www.spectrum.vt.edu.

Walking tours are part of the CommonHealth fitness program. Participants will receive a free CommonHealth gift in addition to the memento provided to all staff. Bring an umbrella if there is a possibility of rain showers. Tours will not be cancelled unless severe weather is forecast. Tickets for campus tours will be distributed on a first-come, first-served basis and will be mailed to you in campus mail prior to May 15.

Please bring your ticket to ensure your place in the tour. You should arrive and begin lining up for walking tours inside the main entrance to Rector Field House at least 15 minutes prior to the departure of your tour. Refer to your ticket for departure time. Signs will be posted to assist you in locating your tour.

HORSESHOES AND VOLLEYBALL WEATHER PERMITTING

LIVE MUSIC FROM TWO POPULAR GROUPS



VERNON BURNSED TRIO

(Easy listening jazz and popular music from the 50's through the 80's)

10:00 a.m. to 12 noon

FESCUE

(Mainstream bluegrass from two-time winners of the Galax Fiddler's Convention)

1:00 p.m. to 3:00 p.m.

If you are a person with a disability and desire any assistive devices, service or other accommodations to participate in these activities, please contact the Office of the President at 231-7111 or TTY 231-9460 to discuss accommodations by Friday, May 10.

STAFF APPRECIATION DAY MEMORANDUM

TO: Deans, Directors and Department Heads
FROM: Charles W. Steger
DATE: April 5, 2002
SUBJECT: Staff Appreciation Day—Wednesday, May 15

Once again, the university would like to express thanks to the many individuals who play such a vital role at Virginia Tech: the members of our staff. Therefore, I have declared Wednesday, May 15 as Staff Appreciation Day, with the day's activities beginning at 10 a.m. at Rector Field House and concluding at 3 p.m. This will be the tenth anniversary of this event, and I am writing to request your strong support for Staff Appreciation Day by encouraging staff members to participate. This gives them an opportunity to visit with their friends, go on campus tours, enter to win prizes, and cheer on fellow employees competing in relay games.

Please allow all staff and non-student wage employees in your area to participate for a minimum of several hours. Food service will be offered between 11 a.m. and 1 p.m., and a schedule of the day's activities will be mailed to all staff members. Please share copies of this letter with your managers and supervisors to help them understand the commitment we want them to make toward the success of the day. We recognize there are certain departments that require varying levels of staff support throughout the day; therefore, we are suggesting that offices stay open to receive visitors and phone calls, but with minimal and rotating staffing required to do so.

Staff Appreciation Day cannot be considered a substitution for leave. Employees are asked to report to their normal work location that morning and return in the afternoon. Employees on sick leave or planned annual leave on this date should record the full eight hours as leave. Regrettably, funding is not available to expand the celebration to include family members. As in the past, it is intended for employees only.

I appreciate your support of this event, which I believe can make an important contribution to staff morale at Virginia Tech, especially this year. I also invite you express your appreciation by assisting at the picnic. For this tenth anniversary, an especially large cake will be prepared to mark this milestone. We need your help in serving cake and ice cream and escorting tour groups. If you would be willing to help, please reply to mbmurray@vt.edu.

TOUR DESCRIPTIONS

Historical Group Walk (10:15 a.m., 25 spaces, 45 minutes)

Doug Martin, human resources manager, Personnel Services, has obliged us again this year to do his almost legendary historical commentary of the university. As he leads the group to various sites on campus, Doug will share humorous and interesting anecdotes about the history of Virginia Tech.

Horticulture Gardens (10:30 a.m., 11:15 a.m., 1:30 p.m., 15 spaces each timeframe, 45 minutes)

Located on Washington Street, adjacent to Rector Field House, the Horticulture Gardens complex is a living museum of plants. A guide will provide an informational tour of the gardens during the times listed above, however,

please feel free to wander through and enjoy the beauty of the gardens at your leisure throughout the day. For more information, refer to web site <http://www.hort.vt.edu/VTHG/>.

Merryman Center/Legends Hall (10:15 a.m., 10:45 a.m., 11:15 a.m., 15 spaces for each timeframe, 45 minutes)

The Merryman Athletic Center serves as a multi-purpose facility used by Virginia Tech athletes. The building houses a 130-seat auditorium, academic center, and sports-medicine offices. A tour guide will take you through the conditioning and weight-training complex, multi-purpose gymnasium and Legends Hall, the new entranceway to the athletic department that showcases Virginia Tech football memorabilia.

CommonHealth Fitness Walk (1:30 p.m., open to anyone interested, 30 minutes)

Robin Conaway, director of CommonHealth at Virginia Tech, will lead the walk to the International Peace Garden located on the hill overlooking the tennis courts on Washington Street. An excerpt from the Spring 2002 edition of the *Virginia Tech Magazine* describes the garden as featuring "...plantings chosen not only for their beauty, but also for their ties to parts of the world that have been ravaged by war and are now peaceful or struggling for peace." The garden and the history of its beginning is a very interesting story that you won't want to miss hearing.

Smart Road (10:30 a.m.; 1:30 p.m., 80 spaces each timeframe, 1-1/2 hours)

Come join us for a bus tour of the Smart Road and the tallest bridge in Virginia. The newly completed bridge over Ellett Valley stands at 175 feet tall. Embedded with computer chips, monitored by cameras, and outfitted with weather simulators of all types, this stretch of highway is a test bed for interesting and unusual research. For more information, refer to web site <http://www.ctr.vt.edu/>.

The Grove (10:15 a.m., 10:45 a.m., 11:15 a.m., 15 spaces each timeframe, 45 minutes)

The Grove's stately ambience provides housing for Virginia Tech presidents and their families, and offers lodging and reception areas for distinguished guests to the university. A guide will take the group through the main floor

(See TOUR on 7)

EMPLOYMENT

CLASSIFIED POSITIONS

The following classified positions are currently available. Position details, specific application procedures/position-closing dates may be found on Personnel Services web site <http://www.ps.vt.edu>. Positions are also listed on the Job Line, a 24-hour recorded message service. For information on all job listings, call 1-5300. Some positions include state benefits. Positions with numbers beginning with "W" are hourly and do not include state benefits. Individuals with disabilities desiring assistance or accommodation in the application process should call by the application deadline. Closing date for advertised positions is 1 p.m. Monday. An EO/AA employer commit-

ted to diversity.

FULL TIME

One full-time food-service position available.

CSS/Surgery Technician, 002647M, PB 2, VTH.

Electrician, 001050F, PB 3, Physical Plant.

Fiscal Coordinator, 007938R, PB 3, Graduate School.

Forge Testing Specialist, 003129M, PB 4, Dairy Science.

Housekeeping Worker, 006453C, PB 1, Physical Plant.

Human Resources Specialist, 007570D, PB 4, Personnel Services.

Lab Technician, 007946Y, PB 3, VBI.

Laboratory Specialist, 007944M, PB 3, Biochemistry.

Large Animal Veterinary Technician, 001996M, PB 4, VTH.

Phototypesetting Specialist, 000601A, PB 3, Printing Services.

Project Coordinator, 007469G, PB 3, School of Arts.

Radiologic Technologist, 002394M, PB 3, VTH.

Tv/Media Systems Engineer, 000196A, PB 4, VBS.

Webmaster, 007943Y, PB 4, VBI.

PART TIME

Large Animal Husbandry, W022155M, PB 1, VTH.

Program Support Technician, 004570M, PB 3, CSES.

Radiologic Technologist, W022412M, PB 3, VTH.

Switchboard Operator, W022101A, PB 2, CNS.

Veterinary Technician, W023340M, PB 4, VTH.

UNIVERSITY ONLY

Lab Specialist, U007948M, PB 3, VA SAREC.

OFF CAMPUS

Administrative Assistant, 007947J, PB 3, CFNP/MI.

Office Manager, 007796Y, PB 3, IALR.

Operating Room Supervisor, 007377M, PB 3, CVM.

Research Specialist, 007942J, PB 3, VTTI.

Secretary Senior, 002089R, PB 2, NVC.

Unit Administrative Assistant, 007296M, PB 3, VCE—City of Norfolk.

Wildlife Worker, 006638G, PB 2, Biology.

LETTER

Continued from 1

follow-up discussions with the respective units have clarified many issues. The units have done a credible job of making selective cuts and have avoided across-the-board reduction strategies. The academic units have also submitted plans for the reinvestment of resources consistent with a 2-, 4-, and 6-percent restoration of funds to the budget. The reinvestment mechanism will be a primary way to assure that the overall reductions are programmatically strategic and result in net reductions that are not across the board. Each unit is receiving a separate letter formally verifying the approved budget-reduction targets.

Several trends are evident in the reduction proposals. The availability of the Alternative Severance Option (ASO) program is enabling many units to manage personnel reductions with an opportunity to minimize damage to the programs and to minimize forced layoffs. The proposals work hard to protect staff positions and minimize any further erosion of operating capabilities. Also, most units are striving to maintain most of their graduate-teaching-assistant positions, consistent with the goal of the strategic plan to enhance graduate education. Faculty and administrative positions are bearing the brunt of the reductions—a worrisome, but probably unavoidable, circumstance. Units are working to protect the integrity of the research and teaching programs through internal realignments and strategic recruitments. The emerging college strategic plans are laying out comprehensive plans to enhance the overall academic quality of our programs.

As expected, most of the proposed reductions are in the personnel area since approximately 80 percent of the overall budget is invested in human resources. Because the implementation of the ASO program is still in progress, the final number of positions that will be impacted due to the reductions is not yet available. However, for 2002-03, we anticipate that approximately 299 positions will be impacted as part of the university's budget-reduction plan. This includes 109 filled teaching and research faculty positions, 89 filled administrative and professional faculty positions, 55 filled classified-staff positions, and 16 graduate-teaching-assistant positions; the remaining positions will be recovered from positions that are currently vacant. A critical strategy in managing these reductions is the refilling of positions at lower salary levels. Therefore, the net reduction of positions is anticipated to be 209, of which approximately 88 are teaching and research faculty, 55 are administrative and professional faculty, 16 are graduate teaching assistants, and 50 are classified staff.

These personnel reductions account for

over 80 percent of the total budget reductions (\$16.58 million). Other strategies included reducing operating costs (\$3.92 million); reducing programs and services (\$1.25 million); and shifting costs to the auxiliaries, the Virginia Tech Foundation, or to sponsored accounts (\$3.13 million). Further units plan to cover approximately \$5.48 million in one-time costs that are related to the severance program.

Reinvestment in the Future of the University Reinvestment Proposals:

Most of the reinvestment proposals from the academic units focus on re-building the faculty through recruitments of faculty members in "clusters" aligned with broad-based academic initiatives and/or core programs. The Administrative Coordinating Councils will play a key role in reviewing proposals that fit within the domains of the councils and in making recommendations to Provost McNamee. Mechanisms for review of proposals not easily assignable to a council are being developed. The councils will be evaluating the specific reinvestment proposals alongside on-going initiative proposals so that a unified prioritization can occur.

Because most of the budget reductions are occurring in this coming fiscal year and because the ASO program generates a substantial need for transition funding, most of the available funds for reinvestment collected from all parts of the university will not be available until 2003-04. However, as outlined below, selected investments will occur this year. Most decisions about faculty clusters and related reinvestments will be made on a rolling basis this year with the assumption that most approvals for new funding will not actually generate major new expenses until 2003-04.

Reinvestment Decisions to Date:

There are many things Virginia Tech needs in order to meet its ambitious goals, and some investments need to be made now to ensure the integrity of core programs, the advancement of key initiatives, and the potential for future growth.

1. Among these university-wide investments is the library. In the spirit of the commitment made this year, funds will be restored to the library to avoid forced reductions in serials and other library materials. Instead of a reduction, the library will receive a 3 percent increase in funding.

2. Funds are being set aside to handle enrollment pressures in key courses, especially core courses required for first-year students and other selected courses. Selected activities designed to strengthen the core curriculum will be supported. The actual allocation of central funds will depend in part on how well the colleges have identified the needed resources to deliver

key courses. The proposed "college consortia" will be challenged to develop creative solutions to overall teaching needs, and funds will be available to catalyze sustainable sharing of responsibilities and initial phases of restructuring. It is reassuring to note that reductions to key university-wide teaching-support activities have been kept to a minimum.

3. Two major research initiatives will be enabled this year as a result of substantial faculty planning and recommendations from the Administrative Coordinating Councils. The initiatives are critical to our efforts to expand our overall research capabilities.

(i) The Virginia Tech Institute for Critical Technologies (VTICT) will be assisted in its development through support of the biomedical engineering and sciences program, nano-scale science and technology, and the International Institute for Information Technology. The VTICT embraces a comprehensive strategy to help build the research buildings, infrastructure and research personnel necessary to advance Virginia Tech's agenda for increased prominence in existing and emerging areas of national importance. The College of Engineering is playing a leading role in this university initiative that will be part of the next capital campaign.

(ii) The Virginia Tech Institute for Biomedical and Public Health Research (VTIBPHR) will be launched to provide overarching leadership for several initiatives related to the growth of biomedical and public-health research activities in partnership with the colleges and with our medical-school partners. The emerging plans for several research centers and proposed faculty clusters will be coordinated through the institute. The Food, Nutrition and Health Initiative will progress as part of the VTIBPHR. The Virginia Bioinformatics Institute will work closely with the Institute of Biomedical and Public Health Research to forge collaborative activities.

4. The arts, humanities, and social sciences at Virginia Tech are poised to achieve a new level of prominence, and these areas are expected to benefit from the reinvestment proposals. As an immediate step, funds will be allocated to accelerate the development of two to three new doctoral programs. In addition, funds will be reserved to ensure that emerging initiatives will be able to receive start-up support. We continue to develop plans for a fine-arts center that will enrich our cultural and academic programs.

5. In the spirit of entrepreneurship, start-up funds will be set aside to launch a new Executive MBA Program in the Pamplin College of Business. The college will create a program for mid- and senior-level profession-

als and expects to use its entrepreneurial capacity by assuming all risks associated with the implementation and delivery of the program while also retaining a major portion of the surplus revenue generated. The Pamplin College will compensate the university for any services it provides.

6. Nearly all these investments focus directly on the academic programs, and the administrative and support programs will await improvements in revenues before considering reinvestments. However, the major capital projects that are planned or in progress as summarized below will require additional staff support in order to be successful. Funds will be allocated to ensure that projects are completed as quickly and cost-effectively as possible.

Investment in Facilities

As we have shared with you over the last several months, the state has proposed a major capital package that can bring over \$134 million in capital-project work to the university. The package includes the construction of new academic facilities, including a fine-arts center, a biology building, a bioengineering building, and the second bioinformatics building; the construction or renovation of facilities that support the auxiliary functions, including a new residence hall, an addition to the G. Burke Johnston Student Center, a new dining and student union facility, and the stadium expansion; the renovation of existing facilities, including Williams Hall, Burruss Hall, Agnew Hall, and Henderson Hall; and improved health, safety, and accessibility projects. These new projects will provide much-needed instructional and research space and will improve the facilities for students.

Next Steps

Over the next month, we will be sharing the budget plans with members of the Board of Visitors so they will have sufficient time to digest this information in preparation for the June 4 board meeting. At that meeting, the board will be asked to approve the 2002-2003 university budget. The University Advisory Council on Strategic Budgeting and Planning has been working with us on the budget situation, and this group will continue to help us shape the overall plan.

Virginia Tech intends to make progress despite the budget reductions and we will be well positioned to move quickly once the crisis passes. We have challenged ourselves to look critically at our college structures and we have sought to maintain a focus on major themes that will provide a foundation for enhanced scholarship. Let's work together to create the future we cherish.

Sincerely,

Charles W. Steger, president

Provost Mark McNamee's May 1 Letter to Members of the University Community

May 1 has arrived and I wish to provide you with an update on the proposed restructuring efforts at Virginia Tech. The comprehensive progress report distributed on April 22 outlined the major features of possible college structures. The Town Hall meetings and additional informal discussions last week helped to highlight key issues.

To maintain continuity in the discussions, I have decided to accept the April 22 report as the framework for recommendations, and I will be preparing a modified version of the report as the official "May 1" document.

Since announcements about budget reductions and initial reinvestments are being released today, and since the April 22 report has received considerable publicity, I have decided to wait a few days before posting a revised report.

Specific recommendations for most of the issues will be included in the revised report and there should be few, if any, surprises.

A key recommendation will be to start the process of building colleges around the areas of biological, mathematical and physical sciences and around the areas of humanities, arts, and social sciences with some accompanying reshaping of the College of Human Resources

and Education.

It is planned that a limited number of individual departments and programs will move from one college to another as suggested in the report.

Several schools will be proposed along the lines outlined on April 22. We will be reviewing the proposals with the Board of Visitors and I encourage on-going discussions to refine the various models. Beginning May 15, Dr. Joseph Merola will work with me full-time in his role as a senior administrative fellow to develop implementation strategies.

With the major framework defined, subsequent reports will focus on issues specific to parts of the overall plan. The consortium model appears to offer a good way for us to maximize the benefits of common interests without sacrificing external or internal visibility and flexibility. As noted at the Town Hall meeting, one outcome is to continue to support collaboration, cooperation and on-going change within and among the colleges.

An additional positive feature of the proposed college models is the opportunity for some special pair-wise partnerships among the colleges for specific areas of complementary disciplines. For example, architecture and urban

studies and natural resources share interests in urban landscape design, environmental policy, etc.

The sciences and engineering share common interests in nano-scale science and technology.

The two colleges emerging from arts and sciences share common interests in the value of a liberal arts education and the social impact of science. The consortium model is being extended to create a "university consortium" to handle the core curriculum and the broader issues associated with our very successful investments in undergraduate education, quality of student life, and faculty development.

I have asked Associate Provost Ron Daniel to take a leading role in ensuring that undergraduate education and the core curriculum receive high-level attention during this transition period. Once again, I wish to extend my appreciation to the faculty and staff members who have helped to shape the discussions.

The community of scholars at Virginia Tech is quite remarkable, and the open and spirited debate about opportunities for change has been enlightening.

I have learned more about the history,

aspirations, successes, and disappointments of the faculty during the past few months than I might have learned in a lifetime. The new structures create opportunities and expectations for excellence. They also create expectations for support and recognition.

The severity of the budget reductions will affect the pace at which we can advance on multiple fronts. The new units will be challenged to set priorities and focus on areas of established or emerging strength. I am convinced that if we work together in a spirit of shared responsibility and a commitment to scholarly excellence we will succeed. The end of the semester is approaching and many faculty members can look forward to a welcome change of pace. When classes start again in August most things will look the same.

Efforts to manage the budget reductions and find ways to meet our instructional commitments and advance our research agenda will require substantial efforts by many of us throughout the summer. Let's hope for a speedy economic recovery, a sustained commitment to higher education by the people and legislators of Virginia, and a dash of good luck.

Mark G. McNamee, university provost and vice president for academic affairs

Tech student conducts research on bioterrorism effects on the farm

By Leigh Allgood,

University Relations intern

Acts of terrorism against the United States have prompted one Virginia Tech student to look in-depth at the impact an attack against agriculture would have on a farm, a community, and beyond.

Amy Iager is studying the effects of bioterrorism on the farm. As a senior in dairy science, Iager is conducting an undergraduate research project where she develops and projects the effects of a bioterrorism attack against a dairy farm, as well as developing response and prevention plans.

"There is a lot of emphasis placed now on 'homeland security,' but no money is invested

on the producer/veterinarian level, which I believe is the first line of defense. Measures should be taken in prevention and response," Iager said.

"The dairy industry in this area is very important, and the research I am doing is applicable to current concerns," Iager said. In addition to doing research for the academic experience, she hopes to encourage others to think about the effects bioterrorism could have in agricultural settings and beyond.

Iager is working with Frank Gwazdauskas, the David and Margaret Lincicome professor of dairy science, in her research. This study corresponds to Gwazdauskas' interests in natural and man-made disasters and preparedness

for those disasters, such as prevention and response plans.

"This involves the entire crop and meat supply of the country, including by-products," Gwazdauskas said. "Impact on the producers as well as the consumers must be considered."

Iager is investigating the hypothetical scenario of a 250-cow dairy subjected to an attack, exploring the impact that a biological, chemical, or radiological attack to the dairy could have on the farm, the surrounding community, and beyond. An anthrax model will be considered as the biological attack, overuse of pesticide as a chemical attack, and radioactive emission as radiological attack. Various methods of

realizing impact will come from considering the route of infection, cattle losses, spread, and financial loss. Iager plans to develop model biosecurity plans to offer practical solutions to the questions and scenarios presented by the research.

"It is critical to evaluate potential hazards and to prepare responses to such hazards," Gwazdauskas said. Gwazdauskas serves on the Emergency-Response Task Force at Virginia Tech, and is looking at scenarios on the Blacksburg campus and the surrounding community. This includes projecting preparation methods for use with the university's own crops and animals.

TECH

Continued from 1

economic development," Jim Clinton, Southern Growth's executive director said. "They generate new knowledge and new technologies, spin off high-growth businesses, and train future workers. By working closely with state and local agencies, universities can become the engines of prosperity."

Innovation U. points to a number of Virginia Tech accomplishments, including the following:

"The Virginia Tech Foundation has played a significant...role in fostering entrepreneurial development. Over the past few years it has made several investments in venture-capital companies (currently totaling approximately \$8 million), some of which in turn have re-invested in local enterprises."

"Virginia Tech's story is that of a land-grant university that has become very focused on an outreach and economic-development mission—in addition to enhancing its research performance—and is in the process of making a host of organizational changes to align various activities and functions with those goals.... [T]he institution is an excellent model of how significant cultural and structural change can be accomplished to accommodate an enlarged set of priorities."

"In recent years, a new mission imperative

has emerged around the issue of entrepreneurship. This has been a corollary of increasing activity and success in technology commercialization via start-up companies, as well as an increasing awareness on the part of key academic units that this is a key future strategy for the institution."

Besides the Virginia Tech Foundation, other university entities mentioned as contributing to Tech's ranking were the Office of Economic Development, Virginia Tech Intellectual Properties, the Research Division, the Corporate Research Center, various Information Systems programs, Public Service Programs, Continuing Education, the Center for Organizational and Technological Advancement, the Business Technology Center, Career Services, and various research groups.

"The success of Virginia Tech's policies, practices, and personnel—most notably our economic-development and technology-transfer directors—has left a national footprint," Steger said. "We're hoping that, as a result of *Innovation U.* being distributed widely, Tech's experiences can be of some use to other universities seeking similar results."

Southern Growth is a bipartisan, non-profit organization supported by the governments of 13 Southern states and Puerto Rico.

TOUR

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of the home where artifacts of Virginia Tech's history are displayed.

National Weather Center (10:15 a.m., 11:15 a.m., 1:30 p.m., 10 spaces each timeframe, 1 hour)

The weather is of interest to all of us and the National Weather Center is a hub for the multitude of information we need. Besides providing weather and climate forecasts, it also serves as a national information database and communication infrastructure used by all governmental agencies, the private and public sector, aviation, and global communities, especially in times of a crisis or emergency when it is important to communicate information quickly to a broad audience. The tour will include a trip inside the weather station to see how the service brings all of this information together. Web site <http://www.erh.noaa.gov/er/rmk/>.

Veterinary Medicine Teaching Hospital (10:30 a.m., 1:30 p.m., 20 spaces each timeframe, 1-1/2 hours)

The Teaching Hospital operates as a service unit as well as a teaching hospital, so, in addition to clinical duties, the faculty members teach and perform research. Most clinical faculty members are board-certified specialists in medicine, surgery, ophthalmology, radiology, anesthesiology, neurology, and dermatology. They apply advanced diagnostic and therapeutic techniques in caring for their patients. The tour will include a visit to the treatment rooms, holding facilities, surgery and medicine wards, intensive-care units, and diagnostic laboratories. Web site <http://www.vth.vt.edu/about.asp>.

RECIRCULATING

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recirculating aquaculture, who will present over 75 papers and posters.

For a separate fee, participants can tour the Virginia Tech Recirculating Aquaculture Center in Blacksburg, the Freshwater Institute in Shepherdstown, W.Va., or Vic Thomas Striped Bass Hatchery in Brookneal.

The full conference registration fee is \$295 if postmarked by June 17 and \$395 thereafter. The registration deadline for exhibit space is May 17. Trade show exhibit booth fees will be \$800.

For more information: e-mail aqua@vt.edu, go to the Recirculation Aquaculture Conference web site at <http://www.conted.vt.edu/aquaculture.htm>, or contact Ewen McLean, fisheries and wildlife science, at 1-7084.

RETIREES

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Funds to support this scholarship are donated by Virginia Tech employees through the Office of University Development and are administered by the Dependent and Spouse Scholarship Committee. Contact the Office of Scholarships and Financial Aid for application information. To make a contribution to the scholarship fund contact the Office of University Development at www.filebox.vt.edu/univdev/af/.

Tech's SEC funding classroom technology upgrades

By Karen Gilbert

As higher education throughout Virginia faces budgetary shortfalls, students at Virginia Tech are providing some financial relief. The Student Engineers' Council (SEC) has awarded \$50,000 this spring to projects that benefit engineering students.

"The SEC is very proud to be able to participate in this philanthropy that benefits the College of Engineering. The continued success we have had with the Engineering Expo, a career fair held each fall, allows the SEC to give back to the college by financially supporting projects that we feel will directly benefit the majority of the engineering students," said Elliott Shoup, SEC chair.

The SEC solicited proposals from the college community earlier this spring. Of the 14 received, four proposals were funded. Criterion for proposals submitted included projects that would benefit the largest number of engineering students and best reflect the needs of the

College of Engineering. There were no restrictions on ideas for the types of projects to submit for funding—anything from physical improvements to scholarships was considered.

The majority of the SEC funds were awarded for a proposal submitted by the College of Engineering Computer Software and Hardware Committee, chaired by Glenda Scales, assistant dean of engineering for distance learning and computing. The SEC awarded the committee \$46,000 out of the \$50,000 requested to make needed technology upgrades to classrooms. The grant is expected to result in an improvement in classroom facilities and engineering building technology for all students and faculty members.

The \$46,000 in upgrades includes adding wireless connectivity to additional engineering buildings, replacing one-arm desks with tables in classrooms where appropriate, purchasing and installing computer projectors in engineer-

ing classrooms, and adding power supply and tables for students to be able to use laptops in study areas. As part of this proposal, the university will provide matching funds for these upgrades.

Three smaller proposals were also approved for funding by the SEC, including \$2,000 in startup funding for a Freshman Engineering Association. While older students enrolled in specific departments have a sense of community with each other due to common interests and established student organizations, "the freshman have no such sense of community," said Hayden Griffin, head of the freshman engineering program.

Freshman would automatically become members of this group so all students would benefit. The association will provide speakers on relevant topics to freshman and sponsor several major events.

A grant for \$1,000 was awarded to en-

hance the engineering classroom environment. Funds will be used to provide pictures of Virginia Tech graduates working in their respective fields and of renowned engineering projects for display in engineering classrooms. "Such wall displays will supplement teaching objectives and provide legitimacy to course material," says Patrick Devens, assistant professor of engineering fundamentals, who submitted this proposal.

In addition to the \$50,000 just awarded, the student-run organization previously funded \$123,000 in project support to the College of Engineering over the past four years. Other funded projects include the Student Assistance Center, the Frith Freshman Design Engineering Lab, the virtual corporation, the Freshman Engineering Program, a third endowed scholarship, a specific freshman design project and renovation of a popular engineering classroom.

Electronic interlibrary loan system used in one-third of research universities

By Christina D. French

In the past five years, an electronic interlibrary-loan and document-delivery system known as ILLiad has grown from being a lending and borrowing system merely for its creators in Virginia Tech's University Libraries to being the system of choice at 225 libraries across the country. In the past year alone, the percentage of American research libraries having acquired licenses to use ILLiad has grown from 20 percent to 32 percent.

Harry Kriz, director of interlibrary services and director of the project that developed ILLiad, attributes part of the growth in ILLiad use to the Online Computer Library Center, Inc. (OCLC, Inc.), a global library cooperative with 41,000 member libraries around the globe and the sole distributor of ILLiad since October 2000. "OCLC is the proverbial 800-pound gorilla of the library world. About 6,700 libraries in 28 countries use the OCLC interlibrary loan service," Kriz said.

"Backing from such a major international company assures the continued development and distribution of ILLiad and also assures potential customers that their investment in ILLiad will be secure."

ILLiad also has the support of Atlas Systems, Inc., the primary software developer for OCLC ILLiad. In return, ILLiad has helped Atlas Systems, Inc. grow from a two-person, Blacksburg-based business to one with offices in Virginia Beach, Fredericksburg, Blacksburg's Corporate Research Center, and in Davis, California.

The president of Atlas Systems, Inc., Jason Glover, is the creator of ILLiad and everyone involved in the continued development of ILLiad at the company learned the interlibrary loan business in Virginia Tech's Interlibrary Loan Department. "Jason's work went far beyond what we dreamed would be possible when we began the project. He is the one who saw that we could do far more than create a database to do away with our paper files," Kriz said.

Eileen Hitchingham, dean of Tech's University Libraries, likes to point out the economic benefits of the system. "Because ILLiad has been taken up by OCLC, Inc., it is now available for purchase by libraries around the world, and it is likely to feed back again into growth of Atlas and growth of the Virginia economy," she said.

Kriz said that "ILLiad is the first and, in my judgment, is still the only interlibrary-loan system designed from the ground up on the basis of the entire interlibrary-loan process." That unique aspect of the system helped contribute to its widespread success.

The convenience of using it is another

selling point. Kriz said that the electronic system eliminates "much of the tedious work associated with interlibrary loan" since it eliminates paper work, replacing it with the speedier process of typing information into a computer.

Hitchingham said, "Faculty and student users love its convenience. I've had one faculty member say that it is so easy to request something on line and the turn-around time is so fast for getting items that he is sometimes almost disappointed to find that we own an item. If we own it, he needs to schedule time to come over and get it, if he gets it with the ILLiad service he is likely to have an electronic copy on his desktop within a few days."

Kriz attributes its current popularity to other quarters as well. Shortly after ILLiad was introduced to the public five years ago—the library celebrated ILLiad's fifth birthday on March 17—Virginia Tech Intellectual Properties was there to ensure its success. "Many things contributed to the success of ILLiad, including the critical role of Virginia Tech Intellectual Properties, Inc. in developing marketing strategies, learning the library business, and working with OCLC. Virginia Tech's support of entrepreneurial activities truly is extraordinary," Kriz said.

The commercialization of ILLiad was a goal from the beginning. "Benefits of commercialization include long-term viability of ILLiad, lower costs as development costs are spread out over more users, additional innovation as new users are added who have new demands on what the system should do," Kriz said.

Phillips, economic-development director, leaves after five year tenure with university

By Jeanne M. Garon

John Phillips, director of economic development, has left Virginia Tech as of April 30. Phillips has purchased a local moving and storage firm and will serve as its owner and president.

"For the past several years, John Phillips has been a key to Virginia Tech's expanding role as a major economic-development engine for the commonwealth," President Charles Steger said. "His work has not only helped the university to define and enhance its commitment to outreach and economic development, it has also helped Virginia Tech to set a new standard for how land-grant universities can team with commerce and government—and bring a tremendous amount of resources—to help develop local and regional economies, particularly through technology."

During his five-year tenure, Phillips helped more than 650 companies and entrepreneurs throughout Virginia find and effectively use the resources and experts they needed at the university. "Through John, the university's

economic-development efforts have made a huge difference in the business climate of Virginia," Steger said. "We are committed to building on his efforts and continuing the strides we've made in assisting Virginia businesses and helping to improve the state's economy."

Among Phillip's top initiatives, Steger cited the establishment of VT KnowledgeWorks, a strategic venture designed to take new technology companies from idea to operations at an accelerated pace, create jobs, and commercialize intellectual property generated by the university's growing research program; the Technical Assistance Program, a program enabling state businesses to quickly tap into the expertise of Tech's faculty members when faced with technical challenges; and the Virginia Technology Capital Access Forum, which annually brings approximately 20 venture-capital organizations together with hundreds of local businesses and results in numerous companies receiving start-up and expansion funding.

Forest-products students design national ad

By Lynn Davis

Virginia Tech's student chapter of the Forest Products Society has designed a recruiting poster for the American Furniture Manufacturers Association (AFMA) to use in recruiting

students from every major wood-products, wood-science, and furniture program in the nation.

The AFMA will be distributing the poster throughout many business, management, and industrial-engineering departments at colleges throughout America. "Furniture manufacturers are hoping to recruit professional, innovative, and ambitious people for their field," said student advisor and research associate Dan Cumbo at the Department of Wood Science and Forest Products.

Larry Runyan, AFMA vice president of manufacturing noted, "I am very pleased with the work of Virginia Tech's forest-products students. I expect the ad to produce excellent results."

Students participating in the project were Wieke Pohle, Paul Duvall, and Amy Shipley. "The Forest Products Society students designed the poster with modern furniture pieces to portray the furniture industry as a dynamic, innovative, and sophisticated environment," Cumbo said. The AFMA will distribute the poster to colleges, universities, and trade schools this spring.

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