

# SPECTRUM



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

<http://www.unirel.vt.edu/spectrum/>

VOLUME 24 NUMBER 16 FRIDAY, DECEMBER 21, 2001

**TODAY'S EDITION**  
See page 2 for  
campus activities  
information.

## Bond package would fund nine Tech buildings totaling \$139 million



The proposed funding package would include \$24.4 million to complete the Bioinformatics Building Phase I.

See site map on page 3 for location information.

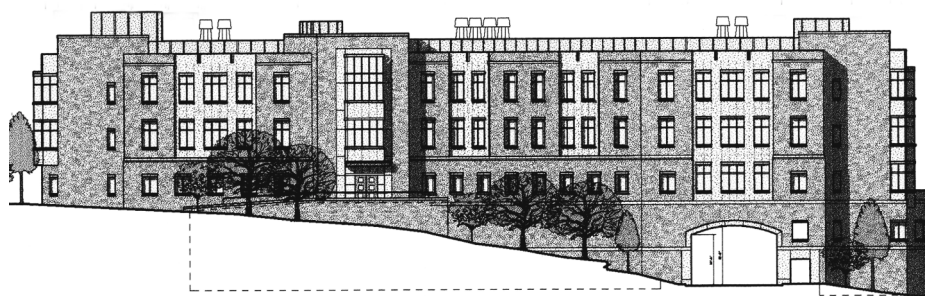
By Larry Hincker  
Governor James Gilmore has announced a bond initiative for Virginia higher education totaling \$927 million. Virginia Tech will receive funding for nine buildings totaling \$139 million.  
“There’s a backlog of need and a huge space deficit on our campus. This will enable us to invest in the infrastructure required to keep this university on the educational vanguard. Quality counts. We must have the best facilities for students and faculty members to achieve the quality experience Virginians expect from a Virginia Tech education,” President Charles Steger said.

(Editor’s note: See chart on page 3 for a list of building projects and specific funding information.)

Also included were several non-General Fund projects (non-taxpayer funds) for a residence hall, dining facilities, and student union facilities. “We’ve worked very hard over the last year with the state to develop new capital investments. I am quite pleased to see these significant investments at Virginia Tech,” said Minnis Ridenour, executive vice president and chief operations officer.

“I am very pleased with this strong support. Top-quality labs and facilities are so very

(See BOND PACKAGE on 3)



The funding package would include \$21.8 million to construct the Agriculture and Natural Resources Building located between the Agriculture Quad and Heathman Hall.

## Researcher works to reduce use of toxic solvents

By Liz Crumbley

In an attempt to curtail the annual use of 36 billion pounds of toxic solvents in the production of acrylic polymers, the U.S. Environmental Protection Agency (EPA) is funding “green-engineering” research by Virginia Tech chemical engineering professor Don Baird.

About six billion tons of acrylic polymers are produced each year, primarily for use by the textile industry in the manufacture of fibers. Baird is developing a process to replace the toxic solvents used in production of acrylic polymers with carbon dioxide (CO<sub>2</sub>).

Solvents reduce the viscosity of acrylic polymers during fiber spinning and other shaping operations, Baird explained. After these operations, solvents are removed in a process that includes a water bath. The toxic solvents then must be separated from the water to prevent environmental contamination.

Although regulations require that manufacturers take pains to collect the solvents and keep them out of the environment, small amounts do escape into ground water and rivers, Baird said. Even small amounts of the 36 billion pounds of solvents used annually pose a problem that the EPA would like to eliminate.

Super-critical—or high-pressure—CO<sub>2</sub> can be used in place of solvents in acrylic-polymer production, Baird said, and would offer distinct advantages. Because the gas occurs naturally, it can be taken from

(See RESEARCHER on 2)

## Research may produce plants that defend themselves

By Sally Harris

Understanding the functions of the genes in the plant *Arabidopsis* could help with research in the fields of agriculture, medicine, and energy; and Virginia Tech researchers have received a grant from the National Science Foundation’s *Arabidopsis* 2010 Project Program to help understand those genes.

Asim Esen and Brenda Winkel of biology and David R. Bevan of biochemistry, along with researchers at the University of Iowa, have received a \$2-million NSF grant for three years to study the “Functional Genomics of *Arabidopsis* Beta-glucosidase and Beta-galactosidase Gene Families.” Virginia Tech will receive \$1.1 million, which includes a \$200,000 sub-award to Virginia State University at Petersburg, and the University of Iowa will receive \$0.9 million.

A possible future use of this research could be the development of plants that can defend themselves better without pesticides or plants that can be used as a source of sugar for food stocks or for the production of alcohol.

“NSF is excited to begin this important endeavor of understanding the functions of each gene in *Arabidopsis*,” said NSF Director Rita Colwell. “While the task is daunting, it is also essential to this growing area of biotechnology research and its many applications. Only by understanding the fundamental processes of each gene can we piece together the puzzle of how DNA determines, for example, the rate of growth, resistance to disease, and many other factors in plants.”

The plant *Arabidopsis* and the 2010 Project

to understand its genes are important to biologists, the NSF said. “By studying this humble plant in the mustard family, scientists can better understand how all sorts of living organisms behave genetically, with potentially widespread applications for agriculture, medicine, and energy,” the NSF press release said. *Arabidopsis* is a useful model because its entire genome consists of a relatively small set of genes that dictate when the weed will bud, bloom, sleep, or seed, the NSF said. Also, those genes have counterparts in crop plants with much larger genomes.

### NSF-funded Research

The Virginia Tech researchers will be looking at a sequence of 125 million nucleotides, or building blocks that make up a gene. “We predict there will be about 25,000 genes their encoding protein,” Esen said. Protein makes up and perfects the functions of our cells. Most of the proteins are actually enzymes. The sequence of protein is encoded in the sequence of the gene. About 25,000 genes in *Arabidopsis* encode protein, and the purpose of the 2010 project is to determine the functions of all the 25,000 proteins.

“We know the sequences of all genes,” Esen said, “but that does not allow us to know what each gene does. In some cases, we know because of a similar gene in another organism and can extrapolate its function in *Arabidopsis*. But we know only about 10 percent of these

genes’ functions directly. For a large percentage, we can predict the function, but that then has to be proven. For a substantial number, we have no idea what the genes or their protein products do. The goal is to determine that.” Information gained from *Arabidopsis* can be extrapolated to other plants such as wheat, corn, cabbage, and soy beans.

Esen and his colleagues will attempt to determine the function of beta-glucosidase and beta-galactosidase genes. In *Arabidopsis*, about 44 genes encode the beta-glucosidase enzyme family and about 18 genes encode the beta-galactosidase enzyme family, Esen said. These two enzymes catalyze similar reactions. “Enzymes are known for their specificity, which is the reason we need thousands of enzymes in cells,” he said.

One well-known function of enzymes is in plant defense. “Plants have to defend themselves on their own ground,” Esen said. “A way to do that is through toxic materials that are activated by some of these enzymes.” For example, he said, the taste of mustard or horse radish comes from the products of these enzymes. “They have a nice flavor to us, but they are toxic or repellant to insects feeding on them.” Some enzymes produce cyanide when plants are attacked, he said.

As we understand these genes and what their product enzymes do,” Esen said, “through genetic engineering, we can produce plants that defend themselves without pesticides.”

ACTIVITIES

EVENTS

Friday, 21

Graduation Reception for International Students, 11 a.m. to 12:30 p.m., Cranwell Center.  
Graduate Commencement, 2:30 p.m., Cassell Coliseum.  
Women’s Basketball, 7 p.m.: At JMU.

Saturday, 22

Fall Commencement, 10 a.m., Cassell Coliseum.

Monday, 24

Christmas Holiday for Faculty and Staff Members.

Tuesday, 25

Christmas Holiday for Faculty and Staff Members.

Wednesday, 26

“With Good Reason,” 7 p.m., WVTF.

Thursday, 27

Men’s Basketball, 7 p.m.: At Florida State.

Friday, 28

Pay Date for Faculty and Staff Members.  
Women’s Basketball, 7 p.m., Lady Luck Classic: Gardner Webb.

Saturday, 29

Women’s Basketball, time TBA, Lady Luck Classic.

Monday, 31

New Year’s Holiday for Faculty and Staff Members.

JANUARY

Tuesday, 1

New Year’s Holiday for Faculty and Staff Members.

Wednesday, 2

Men’s Basketball, 7 p.m., Cassell Coliseum: Connecticut.

Thursday 3

Women’s Basketball, 7 p.m., Cassell Coliseum: Clemson.

Saturday, 5

Men’s Basketball, noon, Cassell Coliseum: Seton Hall  
Women’s Basketball, 7 p.m., Cassell Coliseum: Syracuse.

Monday 7

International-Student Orientation (Through 1-12).  
Faculty Development Workshop, 9 a.m. to noon, 1120 Torgersen.  
Faculty Development Workshop, 1:30 to 2:50 p.m., 1120 Torgersen.

Faculty Development Workshop, 2 to 4:30 p.m., 1120 Torgersen.

Tuesday, 8

Faculty Development Workshop, 10 a.m. to noon, 1120 Torgersen.  
Faculty Development Workshop, 1:30 to 2:50 p.m., 1120 Torgersen.  
Faculty Development Workshop, 2 to 4:30 p.m., 1120 Torgersen.

Wednesday, 9

Faculty Development Workshop, 9 a.m. to noon, 1120 Torgersen.  
Faculty Development Workshop, 1:30 to 2:50 p.m., 1120 Torgersen.  
Faculty Development Workshop, 2 to 4:30 p.m., 1120 Torgersen.  
Women’s Basketball, 7 p.m., Cassell Coliseum: Boston College.

Thursday, 10

Faculty Development Workshop, 10 a.m. to noon, 1120 Torgersen.  
Faculty Development Workshop, 1:30 to 2:50 p.m., 1120 Torgersen.  
Faculty Development Workshop, 2 to 4:30 p.m., 1120 Torgersen.  
Men’s Basketball, 7:30 p.m.: At Connecticut.

BULLETINS

ISC offering free software

In an effort to improve desktop computing security, Information Systems and Computing (ISC) is offering free Windows 2000 operating-system upgrade licenses and Internet desktop security software for all university-owned computers.  
The free Windows 2000 and Internet security licenses are available from the Software Distribution Office located in 3220 Torgersen. Users may select between BlackIce and ZoneAlarm security products. Faculty and staff members who wish to participate in this program may submit an order form available at <http://www.ita.vt.edu/freesoftware>. The recommended minimum platform for running Windows 2000 is a Pentium 200 with 128K of memory.

Safety-awareness training now available

Employee safety awareness training is now available on line through Blackboard, making safety training easy, efficient, and convenient.  
Courses are available to anyone required to have certain

awareness-level training, as well as those who would like more information on the topic. To take a course, or enroll employees, (a Virginia Tech PID is required for anyone taking a course) notify Environmental, Health and Safety Services (EHSS) EHSS will enroll the employee in the course, and they will have a month (24 hours a day/seven days a week) to log on and complete it. Supervisors will receive a progress report at the end of the month.  
Currently, the following awareness-level topics are available: personal protective equipment, electrical safety, confined space, lockout/tagout, fall hazard, excavation safety, and scaffold safety. Upcoming additional topics include: hazard communication, bloodborne pathogens, first aid, hot-work permits, machine shop safety, welding and cutting safety, and compressed-gas-cylinder safety.  
EHSS also maintains safety-training resources for use by departments, including toolbox training materials and an extensive video library. Training on other topics not listed above, including competent person training on a broad range of topics, is available on an on-going basis; additional information

on training and support offered by EHSS can be found at <http://www.ehss.vt.edu/> or contact: Robin Miller or Theresa Conti, Environmental Health and Safety Services, 459 Tech Center Drive Mail, mail code 0423  
**Blacksburg Transit posts break schedule**  
Blacksburg Transit will run on winter-break schedule from Friday, Dec. 21, through Saturday, Jan. 12. The operating hours for break schedule are Monday through Friday from 7 a.m. until 10:15 p.m., Saturday from 8 a.m. until 6:15 p.m., and Sunday from 10 a.m. until 11:15 p.m.  
During the break, there will be no service on the Tom’s Creek B route or Oak Lane.  
On Monday, Dec. 24, bus service will end at 6 p.m., and there will be no bus service on Christmas Day, Tuesday, Dec. 25.  
Regular break service will end at 10:15 p.m. on New Year’s Eve. Blacksburg Transit will be closed for New Year’s Day, Tuesday, Jan. 1.

Faculty Development workshops scheduled for spring semester

Starting Monday, Jan. 28 and continuing through Thursday, March 14, nearly 60 Faculty Development workshops are scheduled for spring semester, from 10 a.m. to noon or 3 to 5 p.m. FDI workshop topics are organized by themes such as desktop computing skills, web development, digital-content creation, web-based instruction, web-based research and emerging technologies.  
New this semester is Element K, consisting of self-paced, on-line modules for hundreds of popular programs by Adobe, Macromedia, Microsoft and others. Additionally, a three-part series on classroom assessment techniques, will also be offered, with an emphasis on on-line course development.  
Most FDI workshops focus on teaching and learning with technology. The Institute for Distance and Distributed Learning (IDDL) support team will give several workshops on distance teaching. Three workshops will cover

topics related to Blackboard, the university’s web-course management system.  
This year’s workshops range from techniques to add narration to Powerpoint presentations for on-line lectures and creating Flash vector graphic animation to designing effective feedback questions. New versions of several computer programs will also be featured during the spring workshops, such as Adobe’s Premiere and Apple’s Quicktime. Macromedia FreeHand is a vector-based graphics program designed to simplify the task of vector graphics for print media or web sites. Flash is a vector-based program that can replace or enhance HTML for the creation of dynamic web sites, including simple animations.  
Featured in other workshops are updated versions of familiar computer software, such as Adobe PhotoShop, Real Media, Apple QuickTime VR and Blackboard.

(See FACULTY on 4)

Einstein’s Dreams workshop scheduled

A teaching workshop for using *Einstein’s Dreams* will be held January 10, at 3:30 p.m., in 1060 Torgersen.  
All faculty members who instruct first-year students, including GTAs, are invited to attend. The workshop is being offered as part of the January 10 faculty-development event, “Making Their Own Way,” with Marcia Baxter Magolda. Attendance at the full workshop is not required. Registration for the full day is available at <http://www.ceut.vt.edu>.  
*Einstein’s Dreams* is the featured text of

RESEARCHER

*Continued from 1*  
the air and then dispelled back into the air after the fiber-spinning process is completed. Replacing solvents with CO<sub>2</sub> would significantly reduce the costs of manufacturing acrylic polymers as well as the expense of recovering and disposing of solvents.  
In addition, CO<sub>2</sub> does not pose a threat to the environment. “The gas is non-toxic, non-flammable, chemically inert, completely recoverable and inexpensive,” Baird said.  
The project does pose challenges. To make

the Common Book Project for first-year and transfer students. The goals of the project include welcoming students to an intellectual community, fostering community among students and faculty members, and providing interdisciplinary opportunities with a single text.  
The workshop will be a swap session for successful assignments using the book and strategies for spring semester. Student assessment last year showed that students met the goals of the project most often when their faculty members mentioned the book in class.  
the super-critical CO<sub>2</sub> suitable for acrylic polymer processing, Baird will have to design a chamber that can bring the gas down from the high-pressure state to normal atmospheric pressure to prevent polymer foaming.  
Baird also must develop a method that will enable the CO<sub>2</sub> to rapidly interact with the acrylic polymers during production.  
The \$325,000 grant for Baird’s project comes from an EPA/National Science Foundation environmental research partnership entitled “2001 Technology for a Sustainable Environment.”



# 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 committed to diversity.

### FULL TIME

**Assistant Director, Development Research**, 007556S, PB 4, University Development.  
**Athletic Eligibility Analyst/Graduation Analyst**, 000013R, PB 2, Registrar.  
**Binding Assistant**, 007272G, PB 2, University Libraries.  
**Carpenter**, 001109G, PB 3, Physical Plant.  
**Cashier**, 000772H, PB 1, RDP.  
**Command Pilot/Safety Officer**, 002129F, PB 5, ATS.  
**Coordinator of Administrative Affairs**, 007879R, PB 4, Executive VP's Office.  
**Customer Service Manager**, 001525F, PB 4, Physical Plant.  
**Data Base Administrator**, 000862Y, PB 5, ISC.  
**Electrician Supervisor**, 002268S, PB 4, Power Plant.  
**Enrollment Services Specialist**, 007902R, PB 3, Graduate School.  
**Enrollment Services Specialist**, 007903R, PB 3, Graduate School.  
**Financial Planning Manager**, 007567F, PB 5, BFP.  
**Fiscal Technician Senior**, W022963F, PB 3, University Bursar.  
**Food Production Supervisor**, 000405H, PB 1, RDP.  
**Graduate School Technical Coordinator**, 007901R, PB 3, Graduate School.  
**Grounds Lead Worker**, 000230G, PB 3, Physical Plant/Grounds.  
**Housekeeping Manager**, 006926H, PB 3, RDP.  
**Housekeeping Supervisor**, 000269H, PB 2, RDP.  
**Laboratory Specialist**, 007707B, PB 3, CE.

**Laboratory Specialist**, 007860M, PB 3, CVM—BSP.  
**Large Animal Veterinary Technician**, 001996M, PB 4, VTH.  
**Meat Processing Facility Manager**, 003273M, PB 4, FST.  
**Medical Technologist**, 002596M, PB 4, VTH.  
**Multimedia Systems/Applications Specialist**, 002054A, PB 4, VBS.  
**Office Services Specialist**, 006900M, PB 2, CSES.  
**Office Services Specialist**, 007283G, PB 2, ECE.  
**Operations Manager**, 007121H, PB 4, RDP.  
**Program Support Technician**, 005577M, PB 3, APS.  
**Radiologic Technologist**, 002394M, PB 3, VTH.  
**Research Specialist**, 004201J, PB 4, WSFP.  
**Sous Chef**, 000940H, PB 3, RDP.  
**Sous Chef**, 007881H, PB 3, RDP.  
**Technology Opportunities Program (Top) Program Coordinator D**, 007906A, PB 4, BEV.  
**Telecommunications Vendor Billing Assistant**, 000261A, PB 2, CNS.  
**Transportation Planner**, 007498F, PB 4, OT.  
**Turbine Operator**, 002222F, PB 3, Physical Plant.

### PART TIME

**Animal Care Technician Large Animal**, W020066M, PB 2, VTH.  
**Animal Care Technician/Small Animal**, W022675M, PB 1, VTH.  
**Graphic Artist**, W020567H, PB 3, RDP.  
**ICU Veterinary Technologist Large Animal**, W022218M, PB 2, VTH.

**Laboratory Specialist**, W023305M, PB 3, APS.  
**Office Services Specialist**, W023338J, PB 2, Dean of Students.  
**Research Assistant**, W023349J, PB 3, WSFP.  
**Research Assistant**, W023351M, PB 3, AAE.  
**Starter Marshall/Shop Attendant**, W022113J, PB 1, Golf Clubhouse.  
**Veterinary Technician**, W023340M, PB 4, VTH.

### OFF CAMPUS

**4-H Program Assistant**, 005845M, PB 2, VCE.  
**4-H Scnep Program Asssitant**, 005890J, PB 2, VCE—Hampton City.  
**4-H Scnep Program Asssitant**, 007904J, PB 2, Bedford County.  
**Adult Program Assistant**, 006602J, PB 2, HNEF.  
**Adult Program Assistant**, 006604J, PB 2, Prince William County.  
**Efnep Adult Program Assistant**, 006103M, PB 2, VCE—Prince William County.  
**Efnep Adult Program Assistant**, 006348M, PB 2, VCE.  
**Fiscal Technician**, 007407M, PB 3, VCE—Smith Mountain Lake 4-H Center.  
**GIS Specialist**, 006702J, PB 3, FW.  
**Program Assistant**, 007234J, PB 2, HNEF.  
**Program Assistant**, 007816J, PB 2, HNEF.  
**Radio Announcer**, W020800S, PB 3, UR/WVTF.  
**Research Assistant**, 007542B, PB 2, Biology.  
**Research Specialist**, 003230M, PB 3, Hampton Roads AREC.  
**Secretary Senior**, 002089R, PB 2, NVC.  
**Unit Support Staff**, 007905M, PB 2, VCE—Page Unit.  
**Youth Program Assistant**, 007464J, PB 2, HNEF.

**Youth Program Assistant**, 005889J, PB 2, HNEF.  
**Youth Program Assistant**, 007233J, PB 2, HNEF.

## FACULTY POSITIONS

### INSTRUCTIONAL

**Near Environments. Assistant Professor/Instructor.** Contact: Dianne Yardley, 103 War Memorial (0317). Review begins Feb. 1.  
**Computer Science. Assistant Professor.** Contact: Charmaine Carter, 7054 Haycock Rd., Falls Church, VA 22043. Review date is Jan. 20.  
**Psychology. Assistant Professor, Industrial/Organizational Psychology.** Contact: Roseanne Foti, 5088 Derring (0436). Review date is Feb. 1.

### NON-INSTRUCTIONAL

**Office of International Programs. Assistant Director, Education Abroad.** Contact: Lisa Mullins, 134 Burruss (0265). Open until filled.  
**VCE. Extension Agent, 4-H Youth Development.** #FA871, Culpeper Co. Contact: Robert Ray Meadows, 121 Hutcheson (0437). Review begins Jan. 9.  
**VCE. Extension Agent, Agriculture/Natural Resources.** #FA668, Northampton Co. Contact: Steve Umberger, 121 Hutcheson (0437). Review begins Jan. 7.  
**Geological Sciences. Research Associate (re-advertised).** Contact: Patricia Dove, 4068 Derring (0420). Open until filled.

## BOND PACKAGE

*Continued from 1*

fundamental to top quality teaching and research," Provost Mark McNamee said.

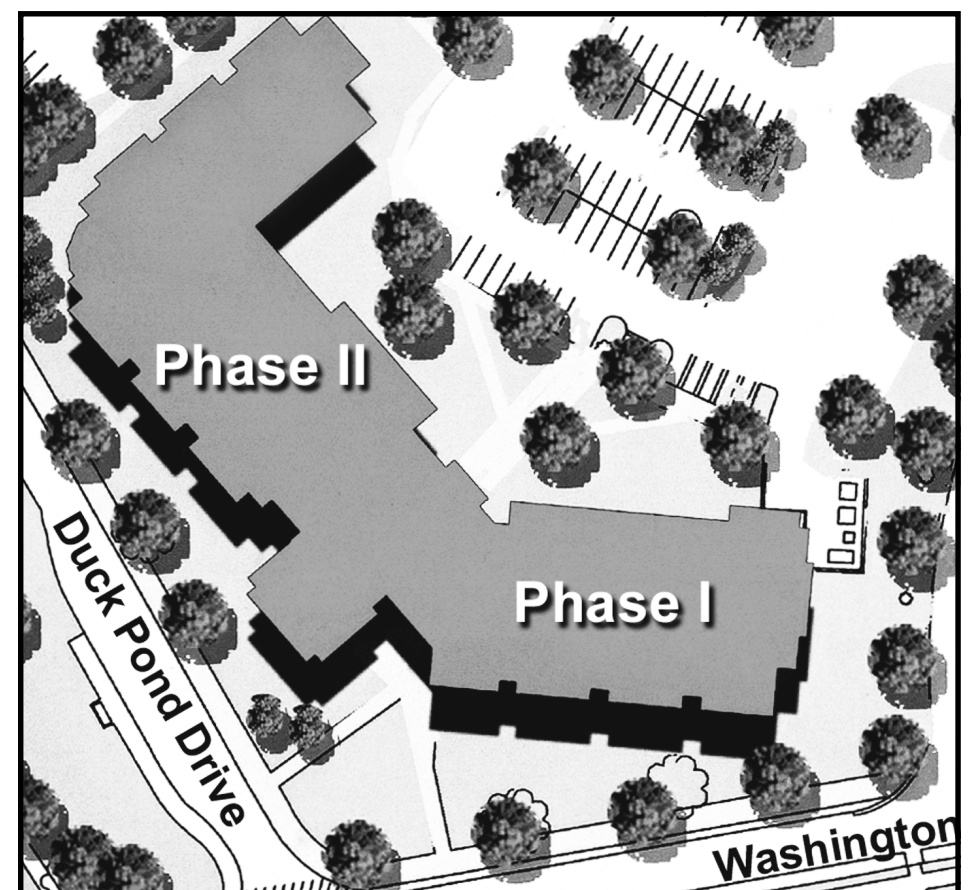
If the General Assembly passes the package as proposed, the university could start seeing money flow for construction sometime in 2002. Approval and funding for the Chemistry/Physics Building already had been released to the university, but will be included in Gilmore's debt-financing package. The proposal includes about \$600 million in funding that would require voter approval in November. If approved, monies likely would become available the following year.

## BUDGET UPDATE

As *Spectrum* went to press, Governor James Gilmore announced his recommended FY 03-04 budget and modifications for the current year. Operating-budget reductions will be required of most state agencies, including colleges and universities. Details are unavailable at this time. Look for more complete information in the next issue of *Spectrum* on January 11.

**At right is a map illustrating Phase I and Phase II of the Bioinformatics Building.**

PROJECT	General Fund	non-General Fund	Total
Bioinformatics, Phase II	\$24.4		24.4
Biology Building	16.1	4.0	20.1
New Engineering Facility	17.0	17.0	34.0
Williams Hall renovation	5.2		5.2
Chemistry/Physics Building	19.1		19.1
Agriculture/Natural Resources Laboratory	21.8		21.8
(Amounts in thousands)	(Does not include Auxiliary Enterprises projects.)		



*Happy  
Holidays  
from  
Spectrum*



VIRGINIA POLYTECHNIC INSTITUTE  
AND STATE UNIVERSITY

*Spectrum*, a faculty-staff tabloid, is published each Friday during the academic year, with the exception of certain holidays, exam weeks, and the summer. Copy deadline is noon Friday. No advertising is accepted.

*Spectrum* is a non-profit publication of the Office of University Relations: Lawrence G. Hincker, associate vice president for University Relations; David Nutter, director of college and media relations.

Editor  
John Ashby, 1-6961

Assistant Editor

Production Manager  
Melinda Shaver, 1-8524

Business Manager  
1-8819

Letters to the editor and questions for "Ask *Spectrum*" should be addressed to the editor, 102 Media Building, Virginia Tech, Blacksburg, VA 24061.

*Electronic Spectrum.* <http://www.unirel.vt.edu/spectrum/>

Virginia Tech does not discriminate against employees, students, or applicants on the basis of race, color, gender, sexual orientation, disability, age, veteran status, national origin, religion, or political affiliation. Any one having questions concerning discrimination or accessibility regarding the programs described in this newspaper should contact the Equal Opportunity Affirmative Action Office: 540-231-7500 (v), 540-231-9460 (TTY).



## E-business significant in state, provides opportunities to enhance profitability

By Sookhan Ho

Virginia businesses are making significant use of the Internet, and while increasing Internet use remains a priority for most of these firms, the challenge is to enhance profitability through e-business, a new Virginia Tech survey finds.

The survey, "The 2001 Digital Dominion Study," requested by Governor James Gilmore's Main Street to e-Street Task Force and sponsored by Virginia's Center for Innovative Technology (CIT), was aimed at benchmarking Internet usage by Virginia businesses, said Wanda Smith, associate professor of management in the Pamplin College of Business and a member of its Center for Global Electronic Commerce. Smith designed the survey and co-authored the report to CIT with Chad Miller, economic-

development specialist with the university's Public Service Programs.

The survey report defines "e-business" as "conducting some or all aspects of business—buying, selling, transacting, or exchanging information—over the Internet with customers, suppliers, distributors/resellers, and/or employees."

The survey found that large organizations are more likely to be conducting e-business activity than small and mid-size firms. Small and mid-size firms, in particular, seldom see the Internet as a means for increased efficiency and cost reduction.

"Their failure to view the Internet as a business-process tool may reduce their ability to compete nationally and globally," Smith

said. Training programs can help these businesses use the Internet to improve their efficiency and profitability, she said.

Of the 623 businesses surveyed, only a quarter reported levels of profitability from e-business, Smith said. Even so, more than 80 percent of the companies surveyed indicated they planned to increase their e-business activity within a year. "Since roughly half the companies that plan to increase e-business do not follow through on these plans," Smith said, "it is important to have support organizations and programs to assist and encourage the implementation of these plans."

The most common e-business expansion plans focused on enhancing existing business. Smith expects that as companies become more

comfortable with the changes that the Internet brings, they will begin to consider new markets as well as new products or ways to serve existing markets.

The report provides recommendations for public and private organizations interested in assisting Virginia businesses

It also examines the policies and practices of Virginia business regarding Internet privacy and security, as well as the "digital divide," or regional differences in the use of the Internet for e-commerce. The report is a publication of Gilmore's Main Street to e-Street Task Force and will be available in electronic format on the task-force web site, [www.councils.cit.org/MS2ES/](http://www.councils.cit.org/MS2ES/), and on CIT's web site, [www.cit.org](http://www.cit.org).

## Special assistant named for contract, IP issues

By Susan Trulove

Carol Roberson will become the new special assistant for research contract affairs in the research division, according to Leonard K. Peters, vice provost for research.

Roberson, who has been general counsel and director of contracts and corporate secretary at WPI, joined the research division December 17. Her primary responsibilities are to facilitate contractual and legal issues associated with research contracts and grants, Peters said. She will develop standard agreement terms and conditions for non-federal grants, review and develop terms and conditions for all contracts, review conflict of interest disclosures, and apply state law and federal agency regulations.

"Of course, the university has been carrying out all of these functions and requirements," Peters said, "but as research activity has grown, the advantages of having this expertise within the research division have become apparent, in terms of facilitating contracts and grants, protecting intellectual properties and rights to publish, and securing indemnity."

Roberson will maintain a liaison with the university general counsel to assure compliance with state laws and policies, and with the assistant vice provost for research compliance on issues related to protection from research risks. She will also work with the Intellectual Properties Committee and maintain a liaison with Virginia Tech Intellectual Properties Inc.

Roberson is a *magna cum laude* graduate of West Virginia University with a bachelor's degree in chemistry and biology. After graduation, she was a research technician for two years, doing biochemistry research and publishing her scientific work. She was then a chemist and quality-control supervisor for five years at Rockwell International, before returning to WVU to supervise 16 cardiology technicians and to be responsible for three cardiology laboratories for the university's hospital.

She earned a doctor of jurisprudence from WVU in 1982, with subsequent legal experience in contract, intellectual property, and environmental law. Before joining WPI in 1996, Roberson was an attorney advisor for the EPA in Triangle Park, N.C.; manager of technology transfer for the U.S. Department of Energy at the Morgantown, W.Va., Energy Technology Center; and a corporate attorney at Monongahela Power Company.

## Wegl wins national research award

By Liz Crumbley

As a Virginia Tech engineering undergraduate, Diane Wegl conducted research that has led to a first place in the American Institute of Chemical Engineer's (AIChE) 2001 National Student Paper Competition.

Wegl vied for the national award after winning the AIChE Mid-Atlantic Student Paper Competition earlier this year. During the AIChE Annual Meeting, held in Reno, Nevada, in November, Wegl's paper describing her research at Virginia Tech was selected as the best of the nation's 10 regional award winners. She received the Edwin O. Eisen Award, sponsored by Omega Chi Epsilon, the National Chemical Engineering Honor Society.

While a sophomore chemical engineering student, Wegl was invited by Associate Professor Kim Forsten to participate in a joint research project with the Virginia-Maryland College of Veterinary Medicine.

The Virginia Tech researchers are investigating the effects of mechanical compression

and hormonal changes on cartilage cells, a study that could lead to a better understanding of the causes of osteoarthritis. Most osteoarthritis research has focused on tissue-degeneration factors of the disease. Researchers at Virginia Tech are studying the cellular causes of osteoarthritis.

Working with cartilage cells from the stifle joints of horses, Wegl developed a special gelatinous environment that prompted the equine cells in the lab to behave as they would in their natural state. The environment created by Wegl also provides a flat surface that will enable researchers at Virginia Tech to conduct compression tests on the cartilage cells in a controlled fashion.

"Diane's research was the starting point of our project," Forsten said. "The scope and independence of her work was remarkable for an undergraduate. She developed the enabling technology for our continued study of mechanical compression of cartilage cells." The ongoing project is now funded by the National Institutes of Health.

## Programmers place in top 10

By Sally Harris

Virginia Tech placed four computer-programming teams in the top 10 of the 2001 ACM Mid-Atlantic Programming Contest sponsored by IBM.

Virginia Tech teams placed third, fourth, seventh, ninth, and 37th out of 136 teams. Virginia Tech's third-place team followed only Duke University, which placed teams in the first and second spots. Other top-10 teams in the Mid-Atlantic region included Messiah College at fifth, the University of North Carolina at sixth, the University of Virginia at eighth, and George Mason University at tenth. Other schools competing included the University of Maryland, James Madison University, Johns Hopkins University, and Wake Forest University.

The regional contest draws student teams from colleges and universities throughout New Jersey, Eastern Pennsylvania, Delaware, Maryland, the District of Columbia, West Virginia, North Carolina, and Virginia. Other regions hold contests at the same time throughout the United States and the world. More than 3,000 teams competed from more than 70 countries and six continents.

As a test of its computer-science skills, each team tried to solve as many of the eight real-life programming problems as it could in five hours. The top teams from each district will compete in the ACM Programming Contest World Finals in Hawaii in March 2002. Virginia Tech will be competing in the international contest for the fifteenth consecutive year.

## OBITUARY

### Anne Cheney

By Sally Harris

Anne Cheney, associate professor emeritus of English, died Monday, Dec. 17.

Cheney began as an instructor of English at Virginia Tech in 1968 and became an associate professor in 1971. She retired in 2000 after 32 years at the university, becoming an associate professor emeritus of English.

She was the author of *Millay in Greenwich Village*; *Lorraine Hansberry*, considered the definitive biography of the playwright; and the *Life and Letters of Jesse Hill Ford*, which was nominated for the Pulitzer Prize in biography. She also published two books of poetry, *Dead Snakes*, *Cats and the IRS* and *The Burg and Other Poems*, which included poetry by Cheney and her students. In 1997, she edited and published *Ophelia's Legs and Other Poems* by Theresa Gillespie, a memorial collection of poems by, for, and about Gillespie.

Cheney was a member of the American Culture Association, the American Culture Association in the South, the North Carolina/Virginia College English Association, and the Modern Language Association.

Contributions may be made on Cheney's behalf to the Humane Society of Montgomery County, Box 287, Blacksburg, VA 24063, or to the Alan B. Cheney Memorial Scholarship Fund of Birmingham-Southern College, Office of Development Services, 900 Arkadelphia Road, Birmingham, AL 35254.

## WMH investigation closed

The Virginia Tech Police Department has closed its investigation into the suspicious package that was found in a locker recently in War Memorial Hall.

Police officials said their investigation has determined that there was no intention to create the appearance of an explosive device.

## FACULTY

*Continued from 2*

FDI workshops are designed for instructional faculty members, however all workshops are open to staff members and graduate students. Seating is limited per workshop and on-line registration is possible at <http://www.fdi.vt.edu/spring/2002/default.html>

All workshops held in the FDI Classroom (3060 Torgersen) or New Media Center, (1120 Torgersen), unless otherwise indicated.

For more information, contact Ed McPherson at 1-8029, [ejay@vt.edu](mailto:ejay@vt.edu) or <http://www.fdi.vt.edu>.

Non-Profit Organization, Postage Paid  
Blacksburg, VA Permit No. 28

Virginia Tech  
Blacksburg, VA 24061