

SPECTRUM

Virginia
Tech

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

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TODAY'S EDITION
See page 3 for Faculty
Senate information.

Beamer and staff to remain at university

By Larry Hincker

Head football coach Frank Beamer and his staff will remain in Blacksburg, thanks to a new package agreed upon Monday morning by Beamer and university officials.

"I have taken my name out of consideration at both North Carolina and Alabama," Beamer said at a press conference Monday afternoon. "When you get away a little bit, you realize how special this place is. I know that the grass always looks greener on the other side. But when you sit back and look, you see how green the grass is right here. It's always flattering when people are interested in you and think you are doing a good job. But when it's all said and done, what I really want to do is continue to build this program and be the best program in the country year-in and year-out."

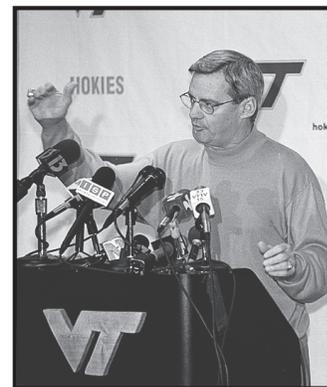
Beamer's new deal is worth \$1.025 million per year plus incentives. Under the new package, he will receive a \$200,000 bonus if he leads his team to a BCS bowl and a \$100,000 bonus for playing in any other bowl. These amounts are in addition to the normal bowl compensation currently in his contract.

Director of Athletics Jim Weaver said, "Every year when you're as good as our coaches have made this program in recent years, you're going to have people who come calling for their services. We are pleased that we were able to conclude negotiations this morning and reach a new arrangement that will keep Coach Beamer at Virginia Tech."

An additional \$100,000 annually will be devoted to raises for the coaching staff. The coaches also will receive new bonuses based on the Hokies' bowl participation and performance. Each staff member will receive an additional

\$25,000 if the team plays in a national championship game and \$10,000 more for a win. They will receive \$20,000 for going to a BCS bowl and \$5,000 for a win. A Gator Bowl appearance will earn the coaches \$15,000 and a win will earn them \$3,750 more. Any other bowl appearance is worth \$10,000 more and a win is worth another \$2,500.

"I am very pleased to see Coach Beamer stay with Virginia Tech, his alma mater and place of his greatest coaching successes. His tenure at the university has included a remarkable run at the national championship and eight years of football excellence. We hope that he has many more in the future, all of them here at Virginia Tech," said Tech President Charles Steger. "Frank's package will be slightly more than one million dollars per year, and the assistant coaches will be receiving base pay raises that will rank the staff salaries number three in the nation."



BEAMER

Bohland specifies 'Research-30' strategies

By Jeanne M. Garon

"We are beginning a time of change in our culture as a university," Interim Provost James R. Bohland told Virginia Tech center directors and administrators at the group's fall 2000 meeting in mid-November.

"Before we can decide how to achieve our goal of being a Top-30 research institute by the year 2010," he said, "we must envision what we will look like in 10 years and what our values will be." Attaining "Research-30" status, he said, will involve not only re-thinking research strategies but also strengthening the university's outreach and education efforts.

Bohland said that in 2010, Virginia Tech will have more university structures able to weave entrepreneurial faculty activities into the overall university fabric, a global presence not only in instruction but also in research and outreach, and an outreach program that emphasizes bringing new technologies and understandings of technology to more citizens of the commonwealth, which he notes could also broaden the state's appreciation for and support of Tech.

Bohland also forecast increased flexibility in forming new campus research communities, which he said will involve research structures empowered to ramp up quickly and dissipate when necessary.

Please see related article on page 5.

Other needs he outlined include expansion of Tech's physical and human infrastructure; progressive support of faculty for-profit enterprise, including updated intellectual property policies and increased support for start-up businesses; development of new revenue streams expected to result from marginal increases in state support, and increases in corporate and foundation funding. New partnerships akin to those Tech has with Carilion and the Oakridge National Laboratories, and new instructional initiatives such as on-line courses and degrees will also be needed.

As Tech charts its course toward Research-30 status, Bohland said, the university must also

continue developing and articulating the values that will drive its future global community. Bohland called on the university to retain its core values while being receptive to changes in organizational structures. Among these values he emphasized the importance of an expansive and inclusive community, stating, "Virginia Tech has world-class researchers in engineering and the sciences and we also have world-class poets, designers, and social-science scholars. We want to retain our pre-eminence across the disciplines where we have excellence and build our excellence in research and scholarship where we can."

Other core values he mentioned were free and open discourse on issues of import to society, creative endeavors that challenge existing norms of society, and the recognition that knowledge generation is Tech's fundamental mission.

Bohland called on university administrators to nurture an environment of trust. "We will be forging ahead in new directions and taking risks, so it is inevitable that missteps on the path to greater excellence will occur, but these must not hinder our progress. This is a challenge, but

(See BOHLAND on 8)

ILLiad software brings recognition

What started out as an effort by the Interlibrary Loan (ILL) department of University Libraries to increase customer service and decrease staff workload has ended in a software license that brings international recognition to University Libraries. Virginia Tech Intellectual Properties, Inc. (VTIP) has finalized terms with OCLC, Inc., the Online Computer Library Center, giving OCLC exclusive world-wide distribution rights to the ILLiad software.

OCLC is a non-profit, membership, library computer service and research organization dedicated to the public purposes of furthering access to the world's information and reducing information costs. OCLC has a membership of more than 36,000 libraries in 74 countries. Its WorldCat database contains over 42 million bibliographic records and it is the most consulted database in higher education. OCLC's interlibrary loan functions include a network of 6,700 participating libraries.

In 1996, Harry Kriz, director of Interlibrary services at University Libraries, initiated the software development effort that culminated with the creation of ILLiad. The goal of that effort was to develop an automated, customer-oriented, paperless interlibrary loan system to provide interlibrary loan and document delivery services to the entire Virginia Tech community, both in Blacksburg and beyond.

From the initial planning stages, the ILL staff worked with Virginia Tech Intellectual Properties to protect the university's interests in what had the potential to become a widely used system.

ILLiad went on line at Virginia Tech in March 1997, and shortly thereafter VTIP began receiving inquiries from other libraries interested in acquiring a license to the

(See ILLIAD on 8)

Theoretical physicist shows single molecule can be transistor

By Susan Trulove

The problem: Smaller, more powerful microprocessors require squeezing more transistors into a chip—but there's a limit.

Transistors switch current on and off and amplify current. In existing transistors, this is done by applying voltage to a gate electrode between the input (source) and output (drain) electrodes. More transistors in a single chip means more computational speed. Presently, a single chip can hold up to 28 million transistors, but leakage and tunneling are already a problem. Stray current (leakage) causes crossed signals and electrons bypassing gate fields (tunneling) prevents current amplification.

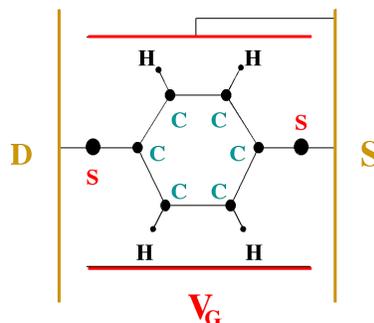
The solution may be molecular electronics.

"We can use molecules as transistors, switches, and memory devices," said Massimiliano Di Ventra, who joined the physics faculty at Virginia Tech this summer.

"We want to integrate billions of molecules into a single chip," he said. "We will have this technology probably in 15 to 20 years."

Di Ventra is a theoretical physicist whose research focus is to understand how molecular electronic devices work. He studies how a specific molecule will behave under current flow. "I inject current into the molecule to see if it can work like a transistor, a switching device, and the like."

This spring, he demonstrated that a benzene molecule can work as a transistor (published in the June 5, 2000 issue of *Applied* (See THEORETICAL on 7)



Benzene molecule as transistor.

ACHIEVERS

Saifur Rahman and **William Tranter** of electrical and computer engineering (ECpE) received the Third Millennium Medal from the Institute of Electrical and Electronics Engineers. The medal recognizes outstanding contributions made to the engineering profession and to advancements that will be significant in the new millennium. Rahman is the director of the university's Alexandria Research Institute, and Tranter is the Bradley Professor of Communications in ECpE.

Ted Rappaport, founder of the Mobile & Portable Radio Research Group (MPRG), testified before the House Subcommittee on Telecommunications Trade and Consumer Protection earlier this year during a review of the Federal Communications Commission's spectrum management responsibilities. In 1999 Rappaport and MPRG graduate students **Roger Skidmore** and **Kirk Carter** conducted an analysis of low-power FM radio frequencies. These frequencies would give low-power FM broadcasters, such as schools and churches, access to the airwaves.

Martin Schnitzer, professor emeritus of management, co-authored *Government, Business, and the American Economy*, with Robert Langran, political-science professor at Villanova University. The book, published by Prentice-Hall, is the 20th Schnitzer has written in the area of economics, political science, and management while at Virginia Tech.

The American Society of Agricultural Engineers has named two faculty members, **Eldridge R. Collins Jr.** and **John S. Cundiff**, fellows of the society. To be named a fellow, an individual must demonstrate unusual professional distinction, with outstanding qualifications and experience in the field of agricultural engineering. Only about 2 percent of the society's active members have achieved the grade of fellow. A 42-year member of the society, Collins is a professor and Extension agricultural engineer in the Department of Biological Systems Engineering. He was honored by the society for his research and advisory contributions in the area of pollution stemming from animal production facilities. Cundiff, a professor in the Department of Biological Systems Engineering, was honored for his dedication to teaching, research, and development of society standards, and his role in planning specialty conferences.

Sandra Kulik, fire safety engineer with Environmental Health and Safety Services, has successfully completed the requirements to obtain designation as a certified fire protection specialist (CFPS). Successful completion of the board examination demonstrates expertise and experience in fire protection and prevention. The CFPS board is administered by the National Fire Protection Association.

Richard E. Sorensen, Pamplin College of Business dean, and **Norrine Bailey Spencer**, associate dean of the college's undergraduate programs, presented a program at the September 2000 Continuous Improvement Symposium of the International Association for Management Education (AACSB). The presentation, "A Collaborative Model for Leadership Development: Changing the Process and the Curriculum," featured the work of the board of the Virginia Tech Center for Leadership Studies and the multiple minors and concentrations offered in leadership. Sorensen chairs the board and directs the center, and Spencer is a member of the board.

Michael Hughes, professor of sociology, has been appointed editor of the *Journal of Health and Social Behavior*, a major sociological journal published by the American Sociological Society. The journal publishes articles in medical sociology and is carried by medical-school and social-science libraries. It is known for its articles on the causes and consequences of social stress as well as articles on social factors in physical health, the organization of health care, and health policy.

Chemistry Professor **David G. Kingston** has been appointed to a four-year term as a member of the Bio-Organic and Natural Products Chemistry Study Section of the Center for Scientific Review. Members are selected on the basis of demonstrated competence and achievement in their scientific discipline as shown by the quality of research accomplishments, publications in scientific journals, and other significant scientific activities, achievements, and honors. Study sections review grant applications submitted to the NIH, make recommendations on

the applications to the appropriate NIH national advisory council or board, and survey the status of research in their fields.

Mark Schneider, Department of Architecture, received a National Endowment for the Humanities grant of approximately \$11,000 to study Maya architecture and culture at the Maya World Institute in Guatemala, Mexico, and Honduras for six weeks this past summer. Schneider has also had two papers accepted for presentation at conferences: "Geometries of the Modern: Between Structure and Gestalt" was accepted for the ACSA East Central Region Conference, November 3-5 at the University of Michigan, and "Architecture as Masque: The Rehabilitation of Mimesis" was accepted for the Second Savannah Symposium on Authenticity in Architecture to be held at the Savannah College of Art and Design, February 15-17, 2001.

Heiner Schnoedt, Department of Architecture, was the faculty advisor of Nasser Abulhassan, who was a finalist in the International Otis Elevator Sponsored Urban Housing Competition. There were entries from 1,245 students, 166 schools of architecture, and 46 countries. Schnoedt and Abulhassan received sponsored travel to Hong Kong, where Abulhassan received both the Merit Award (\$1,000) and the Technology Award for innovative urban technology (\$500). The college also received \$500. Schnoedt's graduate students also swept the annual ACSA/Wood Products Council Carl E. Darrow Student Design Competition, taking home seven of eight prizes totaling \$8,500.

Warren Kark, Department of Architecture, has been responsible for the development of the campus master plan for Isik University to be constructed in Sile, Turkey, approximately 60 kilometers west of Istanbul. Isik University was founded in 1996 and is currently located in temporary facilities in Istanbul. The Sile campus site is totally undeveloped and will require the construction of all infrastructure systems in addition to the campus structures. Construction will be phased over five to 10 years with a first-phase student body of approximately 3,500 students. The campus will eventually accommodate 10,000 students. Kark will continue consulting on the project through completion.

Kark also made a presentation on University Campus Planning for the 21st Century at the annual national convention of the Society of College and University Planning (SCUP) in Denver Colorado in July.

Flynn L. Auchey, building construction department, has been recognized for his research on Risk Management. Based on positive response to his presentation of a Project Risk Identification and Selection Model (PRISM tm) at the Project Management Connections 2000 World Conference in September, Auchey was invited to present the Model at the 2nd International Conference on Decision Making in Urban and Civil Engineering, November 20-22, Lyon, France. The model is designed to help upper management make informed project-selection decisions based on predicted profitability.

Robert G. Dyck, Department of Urban Affairs and Planning, led a People to People Ambassadors delegation of 14 American architects and planners to Prague and Budapest in October. The group met with their counterparts in the planning departments of the two cities as well as with housing, transportation, and historic-preservation officials and private-sector developers. The Ambassadors program was established by President Dwight D. Eisenhower as a means to international understanding and world peace.

Pia Sarpaneva, associate professor of architecture, served as a chairperson in the 8th International Alvar Aalto Symposium, "architecture in the year zero," held in August in Jyväskylä, Finland. She was also a visiting juror at Yale University School of Architecture in October for graduate design studio mid-term reviews.

Faculty members **John A. Rohr**, **Charles Goodsell** and **Gary Wamsley**, and two former adjunct faculty members, **James Colvard** and **Ron Boster** of the Center for Public Administration and Policy, were recently elected to the National Academy of Public Administration, a congressionally chartered institution to which the nation's leading practitioners and scholars

of the field are elected. **Rohr** also won the 1999 Louis Bownlow Book Award for his volume, *Founding Republics in France and America: A Study in Constitutional Governance*. In addition to honoring the book, the award recognized his "eminent contributions to public administration literature," and "rich body of scholarship providing original and classic insights into the constitutional underpinnings and ethics of the field."

Kent Holliday of the Department of Music will receive an ASCAPLUS Standard Award this year. The cash award is made by the American Society of Composers, Authors and Publishers (ASCAP). It reflects ASCAP's "continuing commitment to assist and encourage writers of serious music," according to Marilyn Bergman, ASCAP's president and chairman of the board. Holliday also received an ASCAP Award for 1999-2000 and was selected as winner of the 1998 Virginia Music Teachers' Association Commissioned Composer Competition.

Prentice Hall has published a second edition of *Engineering Vibration*, a textbook by **Dan Inman**, director of the Virginia Tech Center for Intelligent Material Systems and Structures and George R. Goodson professor of mechanical engineering. Unlike standard second editions, this book contains major revisions reflecting changes in the field of vibration engineering and in the way engineers use computers since the first edition was published in 1994.

The College of Natural Resources was well represented at the 21st International Union of Forestry Research Organizations (IUFRO) World Congress held last August in Kuala Lumpur, Malaysia. **Robert L. Youngs**, professor emeritus of forestry and forest products, was involved in organizing several of the sub-plenary sessions, chairing one of them, organizing the general arrangement of sessions in forest products, and presenting a paper on the history of forest-products research in IUFRO. He participated in the pre-congress session of the IUFRO Executive Board and as an honorary member of IUFRO in the closing session of the congress. Following the congress he participated in a study of management of national parks in the moist tropical forest of Malaysia.

James E. Johnson, associate dean for outreach and professor of forestry, moderated a technical session and presented a paper entitled "The Forest Bank—An Innovative Program to Manage Forests and Protect Biological Resources on Private Land." As chair of the Research Group on Extension, he was responsible for coordinating the technical session, including conducting the review, acceptance, and editing of both oral and poster papers.

Bob Smith, associate professor in the Department of Wood Science and Forest Products, presented two papers: "The Development of an Effective Marketing Communication Network for Successful Technology Transfer: An Empirical Study Based on the Diffusion of Portable Timber Bridge Technology" (with graduate student **Ren Jye Shiau**), and "Identifying and Evaluating the Educational and Training Needs in the Disciplines of Forest Products and Wood Science" (with graduate students **Eric Hansen** and **Scott Bove**). He also attended a post-conference tour that studied the Malaysian rubberwood industry.

Jim Chamberlain, a Ph.D. candidate in wood science and forest products, presented his research in a sub-plenary meeting on non-wood forest products. Chamberlain's research is focused on managing the national forests of the eastern United States for non-timber products, including such things as medicinal plants, products for the floral industry, and culinary and edible products.

David Klemperer, professor of forestry, presented a paper, "Does Discounted Cash Flow Exaggerate the Advantage of Borrowing?" served as a poster judge, and moderated a session on "Forest Management Planning and Managerial Economics."

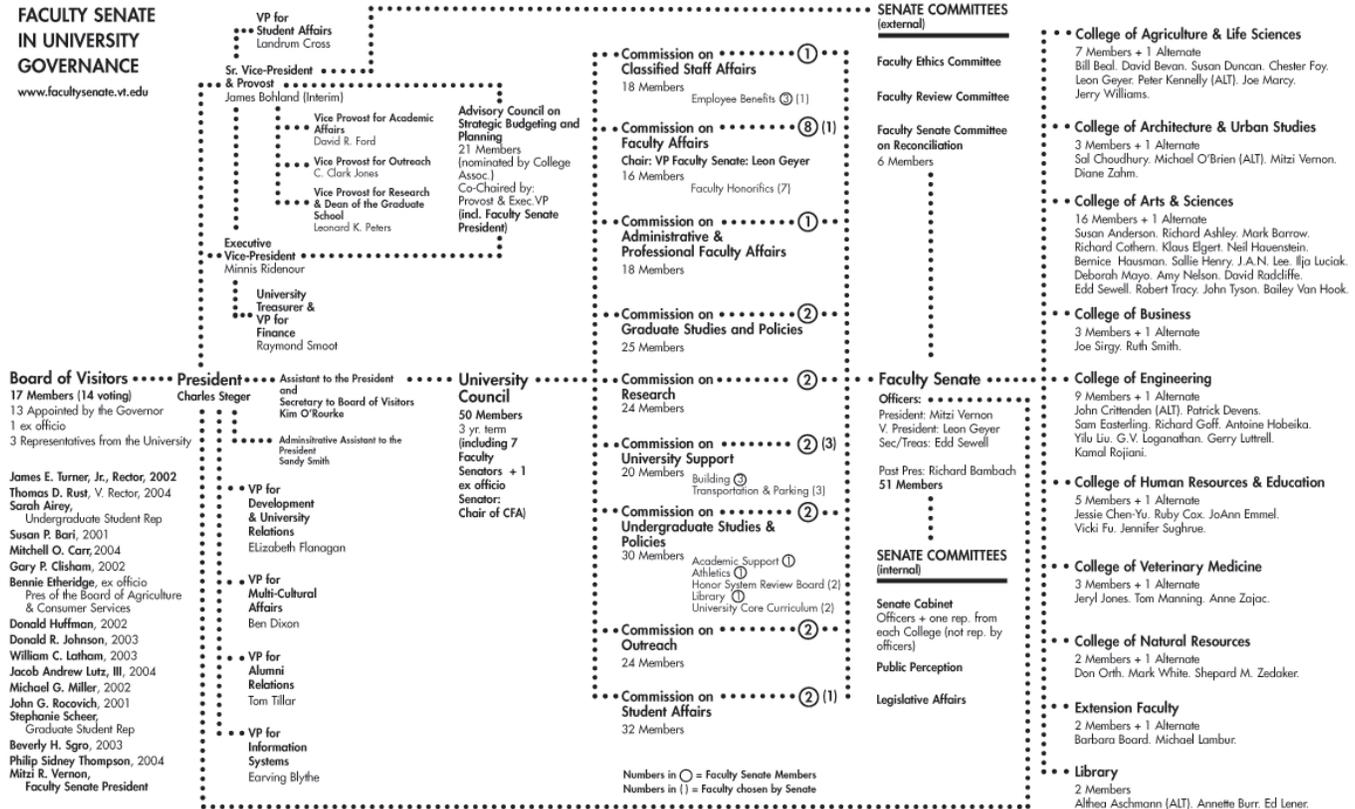
Scott M. Salom, associate professor of entomology with a courtesy appointment in the department of forestry, gave an invited paper entitled "Hemlock Woolly Adelgid in the United States: Status of Ongoing Biological Control Efforts," and co-organized and co-moderated a session on "Insects Affecting Reforestation."

As deputy coordinator for IUFRO Division 4, **Harold E. Burkhardt**, university distinguished professor and head of the Department of Forestry, was involved in the organization of technical and business sessions at the World Congress. In addition, he attended IUFRO Executive Board meetings that preceded the congress.

University Governance Organizational Chart

FACULTY SENATE IN UNIVERSITY GOVERNANCE

www.facultysenate.vt.edu



A LETTER TO THE FACULTY

This is a letter of request to you. The Faculty Senate has unanimously passed its new constitution but now needs your help in making this change official. This important task of streamlining senate procedures and bringing them up to date with current university realities will fail without your active support. According to the current Constitution, 50 percent of you

must vote on this revision and greater than 50 percent of those who vote must support the proposal to send it forward to the University Council.

Your senate has been in the process of updating the Faculty Senate Constitution and Bylaws during the past six months. We realized last year that it had been many years since the constitution was last revised. Many changes have since occurred within the university, not least of which was the transition from the quarter system to the semester system. More importantly, we recognized that the size of the Committee on Reconciliation is not substantial enough to handle the increased level of responsibilities.

During my tenure as a senate officer and now as president I have come to realize how few faculty are aware of the senate and its roles. Briefly, the senate:

Serves as the only independent forum faculty members have for shared governance;

Has direct and regular access to the president, provost, and the Board of Visitors;

Directly represents faculty needs to members of the General Assembly and to the news media;

Provides a peer structure for counseling, intervention, and self-policing through the critical work of its Ethics Committee, Commission on Reconciliation, and Faculty Review Committee;

Makes or nominates appointments to all university committees and commissions.

The governance chart published above illustrates faculty governance within the university through the senate.

At the beginning of Spring Semester, you will find a hard copy of the revised Constitution and Bylaws in your mailbox along with a ballot. We will also distribute electronic versions of the Constitution. You may also visit the Faculty Senate web site at

www.facultysenate.vt.edu and view the constitution, bylaws and the governance chart. There will be a two-week period in February within which we will collect votes. Your college senate representatives will be assisting with the collection. The following is a list of senate cabinet members and other senators who will serve as contact people for collecting ballots: Arts and Sciences: Edd Sewell, Richard Ashley, Annette Burr; Architecture and Urban Studies: Mitzi Vernon, Diane Zahm; Natural Resources: Don Orth; library: Ed Lener; Extension: Barbara Board, Mike Lambur; agriculture and applied economics: Leon Geyer; Human Resources and Education: JoAnn Emmel, Ruby Cox; Veterinary Medicine: Jeryl Jones.

This is *your* Constitution. Please vote.

Sincerely,
Mitzi R. Vernon, president
Faculty Senate
vernon@vt.edu



VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

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Editor
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Assistant Editor
Kimberly Richards-Thomas, 1-8538

Production Manager
Melinda Shaver, 1-8524

Business Manager
1-8819

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VMRCVM'S Lindsay honored by parasitology society

By Jeffrey S. Douglas

Parasitologist David S. Lindsay, associate professor in the Virginia-Maryland Regional College of Veterinary Medicine, was recently recognized with the most distinguished honor conferred by the American Society of Parasitology.

Lindsay, a member of the Department of Biomedical Science and Pathobiology, was presented the Henry Baldwin Ward Medal for 2000. Lindsay received the award during the society's annual meeting in San Juan, Puerto Rico.

Lindsay has been a major figure in international parasitology research for much of the past two decades. Much of his work has

involved the examination of the protozoal parasites causing diseases like cryptosporidiosis, coccidiosis infection in pigs, and toxoplasmosis.

More recently, he has been recognized for his work as part of a USDA-funded team that made a major breakthrough in the understanding of an economically significant parasitic disease afflicting cattle.

Working in the college's Center for Molecular Medicine and Infectious Disease, Lindsay and colleagues demonstrated that the dog is a "definitive host" for *Neospora caninum*, a single-celled parasitic organism which causes pregnant cows to abort their fetuses.

He is also working on an improved

diagnostic test for equine protozoal myelitis (EPM), a fairly recently identified disease which causes a range of neurological problems in horses.

In the Ward Medal acceptance speech, Lindsay attributed the honor to "a great deal of luck and association with extremely talented people." He then chronicled the scientists and the organizations he has been affiliated with during a career that has coincided with major advancements in the field of parasitology.

Lindsay worked at Auburn University and the American Parasitology Institute at Beltsville, Maryland before joining the Virginia Tech faculty in 1997.

ACTIVITIES

EVENTS

DECEMBER

Friday, 1

Salary and Wage Paydate.

YMCA International Program, 11 a.m.-7 p.m., Cranwell Center: International Gift Festival.

Men's Basketball, 6 p.m., at Fairfield.

Saturday, 2

Book Reading, Signing, 1 p.m., Volume Two Bookstore: James Robertson, William C. Davis.

Women's Basketball, time TBA: At Richmond.

Men's Basketball, 6 or 8 p.m.: At Fairfield.

Benefit Concert, 8 p.m., Burruss auditorium: University Concert Choir, NRVS.

Sunday, 3

YMCA Hike, 1:30 p.m., Lancaster House parking lot.

Monday, 4

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

Tuesday, 5

Ensemble Concert, 8 p.m., Squires Recital Salon: Low Brass Ensemble, Clarinet Choir.

Ensemble Concert, 8 p.m., Squires Haymarket Theatre: University Jazz Ensemble.

Wednesday, 6

Classes End.

Poinsettia Sale, 11:30 a.m.-5:30 p.m., Horticulture Greenhouse, Washington Street.

Women's Basketball, time TBA: At Rutgers.

Men's Basketball, 7 p.m., Cassell Coliseum: Elon.

Thursday, 7

Reading Day.

ULD Training Program, 9 a.m.-4 p.m., rooms TBA: 1-7627 to register. (Through 12-8).

Poinsettia Sale, 11:30 a.m.-5:30 p.m., Horticulture Greenhouse, Washington Street.

Friday, 8

Exams Begin.

Women's Network Luncheon, noon-1 p.m., El Guadalupe. Call Dianna Benton, 1-2375.

SEMINARS

DECEMBER

Friday, 1

Highlands in Chemistry, 11 a.m., 3 Davidson: R. Mark Wightman, University of North Carolina.

MCBB, 12:20-1:10 p.m., 102 Fralin: Michael Mendenhall, University of Kentucky.

STS, 3:30 p.m., 132 Lane: Doris Zallen.

Monday, 4

Horticulture, 4-5 p.m., 409 Saunders: Greg Welbaum.

Biochemistry, 4 p.m., 223 Engel: Tom Keenan.

Tuesday, 5

STS, 3:30 p.m., 132 Lane: Bruce Wallace.

Wednesday, 6

PPWS, 4 p.m., Fralin auditorium: Myoung Hui Yun.

BULLETINS

Staff Senate schedules reunion

The Staff Senate will have a reunion December 14 at noon in 1810 Litton Reaves.

Current and former senators and alternates, and current and former staff association officers are invited to attend.

Bursar's Office holiday info noted

The Bursar's Office will be closed from December 22 at noon through Jan. 2, 2001 for the holidays. The only exception will be for the December 29 payday. Only window 5, on the second floor of Burruss Hall, will be open to distribute paychecks from 9 a.m. until noon on December 29.

There is still time to sign up for payroll direct deposit. To have December 29 paychecks directly deposited, payroll direct deposit forms must be received and completely processed by December 1.

For more information, contact the Bursar's Office at 1-6277.

Robertson schedules reading, signing

James I. Robertson Jr. and William C. Davis will do a dual reading and signing at Volume Two Bookstore December 2 at 1 p.m.

Robertson is the author of the new book, *The Confederate Spirit*. Davis is the author of numerous Civil War books, including *Brothers in Arms*.

Participants needed for research study

Working women with physical disabilities are invited to participate in a doctoral-research project about finding appropriate business clothing for work-related situations. The

study will take place during spring semester and will involve focus-group sessions and product evaluations. If interested, please contact Kate Carroll as soon as possible at 961-5305, 1-6832, or kacarrol@vt.edu.

YMCA hosts annual International Gift Festival

YMCA International Programs is holding its annual International Gift Festival at Cranwell International Center on Friday, Dec. 1 from 11 a.m.-7 p.m., and Saturday, Dec. 2 from 9 a.m.-4 p.m.

The International Gift Festival, a World Service Project, sells hundreds of inexpensive items from around the world to provide food, education, and medicine in developing countries. For information call 1-6962.

Tech police offers fingerprinting program

The Tech police department offers a free fingerprinting program for faculty and staff members and students who need security clearances or are applying for U.S. citizenship. Fingerprinting services are available daily after 6 p.m. They are also now provided to university employees on Mondays from 2-4 p.m.

Phi Beta Kappa updating mailing list

The Mu of Virginia Chapter of Phi Beta Kappa is updating its mailing list to keep members informed about chapter activities. Any faculty member, staff member, or administrator who joined PBK as an undergraduate at any institution and has not heard from the chapter recently is asked to contact the Mu of Virginia Chapter secretary, Sandra Birch, at 1-6850 or birch@vt.edu.

Traffic-enforcement reminder

Due to the amount of traffic at the intersection of Southgate and Duck Pond drives, no left turn will be allowed from Duck Pond drive between 7:30-8:30 a.m. and 4:30-5:30 p.m. Signs have been posted to this effect. This will be strictly enforced, and the only exception will be the BT.

Fellowships deadline February 1

The 37th annual competition for White House Fellowships is under way. Since 1964, the fellowships have offered a select group of outstanding men and women a year-long opportunity to participate in government at the highest levels.

Between 11 to 19 fellows are chosen each year to serve as full-time, paid assistants to members of the cabinet and senior White House staff. Fellows also participate in an education program of speakers and travel that complements their work assignment. February 1 is the application deadline.

An applicant must be a U.S. citizen. Employees of the federal government are not eligible unless they are career military personnel. Applicants should be out of school and working in their chosen professions, and are expected to have a record of remarkable achievement early in their careers, the potential to be leaders in their professions, and a proven commitment to public service. There are no formal age restrictions; however, as a result of the selection criteria, the average age of fellows is typically 31-33. Fellowships are awarded on a strict non-partisan basis.

For more information and to receive an application, visit www.whitehousefellows.gov.

Seminar addresses challenges for high-bandwidth communications

By Jeanne M. Garon

Virginia Tech will sponsor the fifth event in its Executive Forum in Information Technology series on December 11 at the Omni Hotel in Richmond.

The seminar, "The Last Mile to Virtual Communities: Putting the 'E' in Economic Development," will address challenges and potential solutions to linking high-bandwidth communications to homes and businesses affordably, while stimulating demand for and full use of electronic e-commerce, e-government, and e-learning applications.

"The rapid growth of the Internet, increased dependence on information or data in all sectors of society, and the tendency world wide to deregulate telecommunications for global commerce have fueled our nation's and state's appetite for access to greater bandwidth and the commerce, government, and learning applications it enables," said Anne Moore, director of information

technology initiatives at Virginia Tech. "This seminar is one in a series designed to bring Virginia Tech's expertise in information technology (IT) to the professionals most in need of it, while also facilitating new dialogue on IT issues throughout the commonwealth."

The seminar aims to connect representatives from major telecommunications providers with local and state government officials, business owners and managers, and city and county officials. Issues to be explored include the regulatory environment, how best to leverage new electronic applications for business, government, and education, and how best to apply resources such as Net.Work.Virginia and VirginiaLink to economic-development needs.

The seminar features plain-language discussions, audience-interactive format, emphasis on broadband network options available in Virginia today, and will showcase network-based

projects already under way across the state.

Clinton Miller, commissioner of the State Corporation Commission, will deliver the luncheon address, while the afternoon panel discussion will include economic-development officers and infrastructure managers from several Virginia counties. The forum will be moderated by Robert C. Heterick Jr., past president of EDUCOM and vice president emeritus of information systems at Virginia Tech. The event is co-sponsored by the Virginia Institute of Government, the Greater Richmond Technology Council, and the Virginia Economic Development Partnership.

The cost for the program is \$75, which includes materials and lunch. Registration is required by December 1. Individuals may register on line at <https://www.conted.vt.edu/ssl/mile-reg.htm> or by calling 1-5182.

Interim Provost Bohland Maintains University Momentum

By Jeanne M. Garon

In addition to helping Virginia Tech chart its initial course toward "Research-30" status, Interim Provost James R. Bohland is addressing several other areas of emphasis while the university continues its search for a permanent provost.

Bohland, who was appointed to the interim position in August, noted "It is critical that we maintain our momentum in several areas."

Among his top priorities, he said, are to continue the university's efforts to determine how the Alexandria Research Institute, Northern Virginia Center, and other university entities serving the Northern Virginia area might be improved to better serve stakeholders; integrate Tech's new Bioinformatics Research Institute into the university structure; and stimulate enrollment in distance-learning programs, an effort including a new pilot program for desk-to-desk synchronous

video transmission of university courses that is expected to emerge as a new model for distance learning.

Bohland will also continue laying the foundation for two other initiatives of President Charles Steger. He will devise a management strategy for enrollment to address recent increases in undergraduate admissions, which have not yet been joined by increases in state funding, while continuing to address the goal of enhanced diversity on Virginia Tech's campuses.

Bohland has indicated that he will not be a candidate for the permanent provost position. A faculty member at the university since 1980, he has been involved in numerous academic and administrative initiatives. He recently completed the state plan for rural health care for a new Medicare program, and he currently holds a research grant from the National Telecommunications and Information Agency to examine the structure and resource systems of community technology centers in disadvantaged neighborhoods.

Rudd named to IAMS position

John C. Rudd, finance implementation team leader for Virginia Tech's Administrative Information Systems, has accepted an appointment as the university's director of internal audit and management services, effective December 1.

Lenwood McCoy has been serving as director of internal audit and management services for one year while the search for a new director was under way, and was recently named to the position of associate vice president for special initiatives.

Before coming to Virginia Tech, Rudd served as an auditor with the Commonwealth of Virginia's Auditor of Public Accounts. In 1990, he came to Virginia Tech as manager of general accounting and data control in the Controller's Office, and has since served as assistant team leader for the Banner Payroll and Human Resources Implementation Team, and as team leader for the Banner Finance Implementation Team. His audit, accounting,

(See RUDD on 8)

Faculty members selected AAAS fellows

By Susan Trulove and Netta Benton

Frank S. Quinn, professor of mathematics, and Kriton K. Hatzios, director of the Virginia Agricultural Experiment Station (VAES) and associate dean for research in the College of Agriculture and Life Sciences, both at Virginia Tech, have been awarded the distinction of fellows of the American Association for the Advancement of Science (AAAS) in recognition of their efforts in advancing science.

Founded in 1848, AAAS represents the world's largest federation of scientists, with more than 143,000 members and 276 affiliated societies. AAAS conducts programs in science policy, science education, and international scientific cooperation, and publishes the prestigious peer-reviewed journal, *Science*. Hatzios and Quinn will be among only 251 scientists to be recognized as new fellows on Feb. 17, 2001 at the AAAS annual meeting in San Francisco.

Quinn was recognized for "pioneering research in low-dimensional topology and in controlled topology resulting in outstanding insights and accomplishments, including the four-dimensional annulus conjecture," according to the AAAS Council.

We are all familiar with two-dimensional topology, including paper and computer screens, and with three dimensions, or 3-D. Topologists study objects in higher dimensions as well, Quinn said. "Although five dimensions and higher are mind-boggling in a way, they are more uniform than the low dimensions, so theory is more manageable."

This theoretical work is important in understanding mathematical structures. It is expected to eventually connect with high-energy physics such as string theory, but such connections are probably still decades away, Quinn says.

As a result of his discovery, Quinn received the Virginia Outstanding Faculty Member Award in 1987 and received the Virginia Tech Alumni Research Award and a University Distinguished Professorship in 1985. His more recent work is also drawing wide attention. Last year he was a visiting professor at Harvard and he has been invited to give the Cairns lecture at the University of Illinois in November. This summer he will be one of the principal lecturers at a European Union conference in Trieste, Italy.

At Virginia Tech, he is part of the computer-testing project in the math department. "Our goal is to have computer-based testing in as many courses as possible. This will reduce routine burdens on faculty members so that they can spend more time with students." He also directs a number of graduate students.

Hatzios, who has been a member of AAAS since 1979, was named a fellow on the basis of his "research and outstanding scholarly contributions advancing the knowledge of mechanisms of actions and selectivity of herbicides."

"I have received numerous awards from other organizations in the past," Hatzios said. "However, being selected to receive the AAAS Fellow Award is a great honor."

The tradition of AAAS Fellows distinction began in 1874. Prospective fellows may be nominated by the steering group of their section, by three fellows, or by the association's executive office. The AAAS Council, which is the policymaking body of the association, votes on the final list.

Hatzios joined the Virginia Tech faculty

(See FACULTY ON 8)

Pettinger receives Preston thesis award

By Susan Trulove

Terry Pettinger has won the Virginia Tech 2000 William Preston Thesis Award. The award is the university's highest academic award for master's-degree students.

Her advisor, English Professor Thomas Gardner, said, "Pettinger's thesis is an attempt to isolate and describe a certain intellectual tension that runs through the six books of poetry that Jorie Graham has written in the last two decades."

The thesis is "Where Intellect and Intuition Converge: Epistemological Errancies in the Poetry of Jorie Graham."

Graham is the major American poet of her generation, having won a Pulitzer prize and a MacArthur "genius" award, and been appointed to a Harvard professorship. But her work is enormously difficult, "seeking through a constantly shifting series of experiments to study and discover new and vital ways to approach the world linguistically," Gardner said.

The poet fears that "we have begun to lose

the sense that language has the power or potential to allow us to work out our deepest problems," Gardner said. "Words seem limited or corrupt or narrow or too slow; they're only used to sell things; nobody trusts them."

Pettinger's thesis "supplies an entrance for Graham's often-bewildered readers, and, by exploring Graham's structures in a broad, conceptual manner, makes clear the resonances of Graham's experiments in the culture at large," Gardner said in his nomination. "This is highly original work (and) of great cultural importance. Pettinger's work is a fine example of the role of literary criticism...it identifies important work, makes it accessible, and tests out its larger implications. ...If such a poetry proves to be successful, our approach to language would indeed change and language would become again a tool rich and subtle enough to use in conducting our most important work. And if such a poetry proves to be successful, it would be in part due to the work of literary critics like Terry Pettinger."

Pettinger received her undergraduate de-

gree from the University of Florida in clinical nutrition. "I love language," she said. "So I just took the leap." She enrolled in English at Virginia Tech. "And it's amazing how everything fell into place. I got funding and found teachers who changed the way I saw language."

Pettinger received an assistantship to teach freshman English and work in the writing center. Then her thesis won the department's \$1,000 Chermide Award for the best thesis or independent study completed in 1999, and the university's 2000 William Preston Thesis Award.

After graduation, Pettinger taught technical writing in mining and minerals engineering for a year—and then took another leap, toward a Ph.D.

She is now a doctoral student in American Literature at the University of South Carolina, where she has a dean's fellowship and is again a graduate assistant, teaching freshman English, as well as American Literature. Her plans are to teach poetry at a university. "I would like to teach introduction to poetry," she said.

Computed-radiography service added at equine center

By Jeffrey Douglas

Non-invasive imaging capabilities at the Marion duPont Scott Equine Medical Center at Leesburg, Virginia have been significantly enhanced with the acquisition of an advanced computed-radiography system. The university-affiliated equine hospital becomes one of just a few veterinary-referral centers in the country to offer the service, according to center officials.

"This computed radiography system raises the standard of medical imaging at the Equine Medical Center," said Nat White, assistant director for clinical services. "This new technology not only provides optimal diagnostic service for horse owners, but it also expands our opportunities for teaching and research."

The new Fuji radiography system pro-

duces a highly refined digital image which is useful for evaluating both orthopedic and soft-tissue problems. The image can be digitally enlarged and/or enhanced to reveal problems that cannot be identified using less-advanced imaging technologies like standard film x-rays and xeroradiography. Digital images from computed radiography can be stored in a variety of media and formats, are easily archived with patient records, and can be transmitted electronically throughout the world on the internet, White said.

The new computed-radiography service was made possible through the generosity of several donors who supported the project. Recognizing the urgent importance of providing Equine Medical Center clients and patients with

the most advanced diagnostic-imaging technologies available, Bertram R. Firestone and wife, Jean Ellen Shehan, and Irwin Wayne Uran, and an additional anonymous donor provided gifts to purchase the equipment.

The Marion duPont Scott Equine Medical Center, located in Leesburg, is one of three campuses operated by the Virginia-Maryland Regional College of Veterinary Medicine, a two-state professional school with major campus facilities at Virginia Tech in Blacksburg and the University of Maryland at College Park. The Equine Medical Center offers 24-hour emergency referral service along with surgical, medical and diagnostic services.

EMPLOYMENT

CLASSIFIED POSITIONS

The following classified positions are currently available. More details of these positions, specific application procedures and position-closing dates may be found on the Personnel Services web site at <http://www.ps.vt.edu>. Available positions are also listed on the Job Line, a 24-hour recorded message service. For information on all job listings, call 1-5300. Some of the following positions include state benefits. Positions with numbers beginning with a "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

Academic Certification Specialist, 000044R, Pay Band 3, University Registrar.

Accounting Associate, 000160H, Pay Band 3, RDP/Business Services.

Administrative/Research Assistant, 007674T, Pay Band 4, ECE.

Administrative Assistant, 002811R, Pay Band 3, Executive Vice President.

Administrative Associate, 006519L, Pay Band 3, University Development.

Administrative Associate, 002202L, Pay Band 3, University Development.

Admissions Plans/Clearances Team Member, 001534R, Pay Band 3, Graduate School.

Animal Care Supervisor, 006998J, Pay Band 4, Veterinary Teaching Hospital.

Animal Care Technician, 002281T, Pay Band 3, Biology.

Animal Care Technician, 007617M, Pay Band 2, VMES.

Animal Care Technician, 002617M, Pay Band 2, Veterinary Teaching Hospital.

Assistant Manager, 006522H, Pay Band 3, RDP/Dietrick Express.

Banquet Manager (Food Operations Manager Assistant), 001118G, Pay Band 3, DBHCC.

Business Development Director, 007568T, Pay Band 5, ECE/MPRG.

Buyer Specialist, 004498F, Pay Band 4, Purchasing.

Computer Systems Engineer, 006991J, Pay Band 5, RGS.

Computer Systems Engineer, 001894T, Pay Band 5, CS.

Computer Systems Engineer, 007691T, Pay Band 5, ESM.

Computer Systems Engineer, 000180T, Pay Band 5, CS.

Data Warehouse Architect, 006930L, Pay Band 5, ISC.

Database And Application Development Specialist, 007230R, Pay Band 5, RGS.

Development Associate for Student Calling Program, 007628L, Pay Band 3, University Development.

Director, Gift Accounting/Constituent Record Management, 001540L, Pay Band 5, University Development.

Dishwash, 002947H, Pay Band 1, RDP/Shultz Dining Center.

Editor, Virginia Tech Magazine, 000654L, Pay Band 5, University Relations/Outreach Communications.

Editor/Communications Coordinator, 007681G, Pay Band 5, OIRD.

Electrician, 007565G, Pay Band 3, Physical Plant.

Electronics Technician, 007656J, Pay Band 4, VTTI.

Enrollment Services Specialist, 001311R, Pay Band 3, Graduate School.

Executive Chef, 000266H, Pay Band 4, RDP/Shultz Dining Center.

Executive Secretary Senior, 007696R, Pay Band 3, University Special Initiatives Office.

Fiscal Technician, 002360M, Pay Band 3, Veterinary Teaching Hospital.

Fiscal Technician, 007697R, Pay Band 3, CTR.

Three full-time food-service positions available.

Honor System Operations Manager, 007648R, Pay Band 3, University Honors—Provost.

Housekeeping Worker, 001631G, Pay Band 1, DBHCC.

Housekeeping Worker, P002005C, Pay Band 1, Physical Plant.

Housekeeping Worker Senior, 006926H, Pay Band 1, RDP.

Housekeeping Worker Senior, 002745H, Pay Band 1, RDP.

Interpreter For The Deaf, 007472J, Pay Band 3, Dean of Students.

Lab Specialist, 001972M, Pay Band 3, Veterinary Medicine/MDL-Academic Affairs.

Mail Clerk, 006959R, Pay Band 2, Undergraduate Admissions.

Medical Technologist, 002596J, Pay Band 4, Veterinary Teaching Hospital.

Medical Technologist (Surgical Ward Technician), 2637J, Pay Band 4, Veterinary Teaching Hospital.

Office Assistant, 007677T, Pay Band 2, VBI.

Office Manager/Administrative Assistant, 000089T, Pay Band 3, ChemE.

Operating Systems Analyst, 000871L, Pay Band 5, Computing Center.

Potwash, 000750H, Pay Band 1, RDP/Dietrick Dining Center.

Program Support Technician, 000028T, Pay Band 3, Scholarships and Financial Aid.

Public Relations Specialist, 007685T, Pay Band 4, ME.

Receptionist/Secretary, 007345T, Pay Band 2, ME.

Return To Work Coordinator, 007695R, Pay Band 5, Personnel Services.

Security Lead Guard (Parking Enforcement Off.), W020119G, Pay Band 1, Parking Services.

Smart Road/Travel Shenandoah Dispatcher Supervisor, 007698R, Pay Band 3, VTTI.

Software Developer, 007690T, Pay Band 5, ESM.

Sous Chef, 000940H, Pay Band 3, RDP/Southgate Bake Shop.

Special Procedures Technician, 006774M, Pay Band 3, Veterinary Teaching Hospital.

Special Projects/Utilities Crew, 000216H, Pay Band 1, RDP.

Systems Analyst, 007343L, Pay Band 6, ISC.

Web/Office Assistant, 003132T, Pay Band 3, Biology.

PART TIME

Admissions Plans/Clearances Team Member, 001248R, Pay Band 2, Graduate School.

Animal Care Tech B, W022914J, Pay Band 2, Veterinary Medicine.

Animal Care Technician A, W022155J, Pay Band 1, Veterinary Teaching Hospital.

Animal Care Technician A, W022563M, Pay Band 1, Veterinary Teaching Hospital.

Animal Care Technician A, W022675M, Pay Band 1, Veterinary Teaching Hospital.

Animal Care Technician B, W022190M, Pay Band 2, Veterinary Teaching Hospital.

Animal Care Technician B, W020556M, Pay Band 2, Veterinary Medicine.

Application Processor, W022876R, Pay Band 3, Undergraduate Admissions.

Assistant to College Alumni Coordinator, W023173L, Pay Band 2, Veterinary Medicine.

Audiovisual Technician, W023110T, Pay Band 2, University Registrar.

Banquet/Setup (Foa-b), W022143G, Pay Band 1, DBHCC.

Bus Driver, W023140R, Pay Band 1, Motor Pool.

Computer Network Support Tech, W023174G, Pay Band 4, Police.

Data Entry Operator, W022875R, Pay Band 2, Undergraduate Admissions.

Fiscal Assistant, W023128M, Pay Band 2, Animal/Poultry Sciences.

Flight Instructor, W023153R, Pay Band 4, Airport.

Three part-time food-service positions available.

Housekeeping Worker, W020214J, Pay Band 1, Health Center.

Housekeeping Worker, W022490H, Pay Band 1, RDP.

Housekeeping Worker, W020574G, Pay Band 1, DBHCC.

Laboratory Technician Senior, W020627T, Pay Band 2, Chemistry.

Office Assistant, W022228T, Pay Band 3, Provost.

Office Services Assistant, W022439R, Pay Band 2, Personnel Services.

Office Services Assistant, W020838J, Pay Band 2, Veterinary Teaching Hospital.

Office Services Specialist, W023146M, Pay Band 2, Agricultural Education.

Overnight ICU Vet Technician, W022218M, Pay Band 2,

Veterinary Teaching Hospital.

Pharmacy Assistant A, W020839J, Pay Band 2, Veterinary Teaching Hospital.

Radiologic Technologist, W022238J, Pay Band 3, Health Center.

Radiologic Technologist, W022412M, Pay Band 3, Veterinary Teaching Hospital.

Secretary Senior, W023132L, Pay Band 2, University Relations.

Security Guard, W0204704G, Pay Band 1, Police.

Security Guard, W020470G, Pay Band 2, Police.

Security Guard, W0204703G, Pay Band 2, Police.

Security Guard, W0204702G, Pay Band 2, Police.

Security Guard, W0204701G, Pay Band 2, Police.

Storekeeper, W022291J, Pay Band 2, Veterinary Teaching Hospital.

Switchboard Operator, W022101A, Pay Band 2, CNS.

Web Page Designer, W023175M, Pay Band 3, Entomology.

Web Software Developer, W023176A, Pay Band 5, CNS.

OFF CAMPUS

4-H Program Assistant, 006652M, Pay Band 3, VCE—Culpeper.

Announcer Of Classical Music, 001702L, Pay Band 3, WVTF.

Enrollment Program Assistant, 002091J, Pay Band 3, Northern Virginia Center.

Radio Announcer, W020800L, Pay Band 3, University Relations/WVTF Radio.

Radio Reporter/News Anchor, 007689L, Pay Band 4, University Relations/WVTF Radio.

Television Systems Engineer, 007106R, Pay Band 4, Virginia Tech Roanoke Center.

Underwriting Account Executive, 001963L, Pay Band 3, WVTF.

FACULTY POSITIONS

INSTRUCTIONAL

Agricultural/Applied Economics. Assistant/Associate Professor. Contact: Everett Peterson, 216-I Hutcheson (0401). Review begins February 1.

Eastern Shore Agricultural Research/Extension Center. Vegetable Entomologist. Contact: Herman Hohlt, ESAREC, 33446 Research Dr., Painter, VA 233420-2827. Review begins February 1.

Near Environments. Family Financial Management Extension Specialist. Contact: Kathleen Parrott, 101 Wallace (0410). Review begins February 15.

Near Environments. Family Financial Management Resident Instruction Position. Contact: Ruth Lytton, 101 Wallace (0410). Review begins January 15.

Near Environments. Consumer Education Extension Specialist. Contact: Kathleen Parrott, 101 Wallace (0410). Review begins February 15.

Small Animal Clinical Sciences. Clinical Instructor, Dermatology. Contact: Don Barber, Phase II, Vet. Med. (0442). Review begins February 1.

NON-INSTRUCTIONAL

Virginia Tech Transportation Institute. Research Associate/Engineer. Contact: Tracey Schroeder, 3500 Transportation Research Plaza (0536). Open until filled.

Virginia Tech Transportation Institute. Research Associate. Contact: Tracey Schroeder, 3500 Transportation Research Plaza (0536). Open until filled.

Alumni Relations. Coordinator for Corps of Cadets Alumni Programs (re-advertisement). Contact: Thomas Tillar Jr., Alumni Hall (0102). Review begins December 15.

Virginia Cooperative Extension. Extension Agent, 4-H Youth Development. #111124, Mathews Co. Contact: Robert Ray Meadows, 121 Hutcheson (0437). Review begins December 4.

Virginia Cooperative Extension. Extension Agent, Family/Consumer Sciences. #FA684, Henrico Co. Contact: John Dooley, 121 Hutcheson (0437). Review begins December 4.

Office of Judicial Affairs. Director, Judicial Affairs. Contact: Edward Spencer, 109 E. Eggleston (0428). Review begins January 1.

Residential/Dining Programs. Associate Director for Marketing/Conference Services. Contact: Edward Spencer, 109 E. Eggleston (0428). Review begins December 1.

ACHIEVERS

Continued from 2

Marketing professor **Jim Littlefield** discussed the status of reform in China at a conference entitled, "China: Opportunities and Challenges for Virginia Exporters" at Radford University on October 4. Littlefield has been organizing and leading students on study tours to China every summer for close to eight years.

A group of faculty members and graduate students affiliated with the Center for Wireless Telecommunications participated in the "Wireless Caucus Kickoff" on Capitol Hill in September. Held to promote the wireless telecommunications industry, the event was sponsored by the Congressional Wireless Caucus and organized by the Cellular Telephone Industry Association.

The Tech delegation included faculty members **Liching Sung** (communications studies), **Steven Smith** (finance), **Charles Bostian** (electrical and computer engineering), and graduate student **Christian Rieser** (electrical and computer engineering). They presented a poster display prepared by **Cortney Martin** (Communications Network Services) and answered questions from members of Congress, their staffs, and visitors from industry and government.

Virginia Tech was the only university invited to participate. The invitation recognized the university's leading interdisciplinary research, development, and deployment activities in broadband wireless telecommunications.

Kristin Makovec, a master's degree student in aerospace and ocean engineering (AOE), is co-author of a paper that won second place in the student paper competition during the American Institute of Aeronautics and Astronautics Conference on Small Satellites held in August at Utah State University. Makovec and two other graduate students—one from Utah State and one from University of Washington—presented their research on a segment of the on-going Ionosphere Observation Nanosatellite Formation project. The students are designing and building three research satellites that will be launched by NASA from the Space Shuttle. The satellites, currently in the initial construction phase, are scheduled to be launched in May 2002. Makovec's paper describes specifications for cameras that will be used for sun- and earth-horizon sensing on each satellite. **Chris Hall** of AOE is the faculty adviser for the Virginia Tech "HokieSat" project.

Michael O'Brien, professor of industrial design in the College of Architecture and Urban Studies, was recently curator of the special exhibit "Wood, An American Tradition" at the National Building Museum in Washington, D.C. The exhibit runs through April 2001. O'Brien worked for over a year on this project—traveling, researching, writing, collecting wood-product examples, and working with designers to construct the exhibit highlighting wood architecture, technological advances in wood construction, the material's cultural significance, and its future use in society.

Jamie L. Callahan received the "Cutting Edge Award" from the Academy of Human Resource Development. Callahan's paper, "Emotion Management and Organizational Functions: A Study of Action in a Not-for-Profit Organization," was presented at the International Research Conference and selected as one of the 10 best from over 200 papers presented.

Rosemary Blieszner and **Michael Sporkowski** were selected fellows within the National Council on Family Relations. Blieszner has established herself as a well-funded and well-

published researcher in the area of families and aging and has made a particular contribution through her research on older women's support networks. Sporkowski, professor and department head of human development, served as president of NCFR, vice president for publications, and editor of "Family Relations." He has also been honored with the Distinguished Service to Families Award because of his national, regional, and local service on behalf of families.

Glenn Earthman was invited to speak at Cornell University's lecture series on community building. Earthman's topic was "Considerations of Comprehensive Land Use and Planning for School Buildings."

The International Graphic Arts Education Association (IGAEA) has presented the Fred J. Hartman Award to **Mark Sanders**, associate professor in the Technology Education Program, Department of Teaching and Learning. The Hartman award is given annually to an IGAEA member who has devoted many years of service to the Association, and in addition, is nationally recognized through contributions and accomplishments in graphic arts teaching, research, and/or service.

Jim LaPorte, technology education, presented an invited paper titled "Technology Education: from Theory into Practice" at the Chile Technology Education Symposium. The symposium was held in July at three locations: La Serena, Santiago, and Concepcion. LaPorte also consulted with the Chilean Ministry of Education and with teacher educators at the University of Playa Ancha in Valparaiso regarding the implementation of technology-education programs. LaPorte joined five other international invitees at the symposium, representing South Africa, England, the Netherlands, Germany, and France.

LaPorte also participated as one of six international invitees at the Finland Technology Education Seminar held in Oulu, Finland. He presented a paper entitled "Technology Education in the United States: A Critical Examination of the Change Process." The purpose of the seminar was to develop in-service programs for technology-education teachers and to plan a Technology Center featuring interactive exhibits of contemporary technology.

R. Bruce Hull, associate professor of forestry, has co-edited *Restoring Nature, Perspectives from the Social Sciences and Humanities* with Paul H. Gobstger, a scientist with the USDA Forest Service. Hull specializes in outdoor recreation. Using a recent controversy over ecological restoration efforts in Chicago as a touchstone for discussion, *Restoring Nature* explores the difficult questions that arise during the planning and implementation of restoration projects in urban and wildland settings. The book is an intriguing exploration of human nature interactions, differing values and understanding of nature, and how that information can be effectively used to guide science and policy. It provides new insights and practical solutions for anyone working to manage or restore natural ecosystems.

The VMRCVM's **Drug Information Laboratory** was recently recognized by the Institute for Scientific Information (ISI) for its on-line version of the *FDA Green Book*. Published by the Food and Drug Administration's Center for Veterinary Medicine, the Green Book contains detailed product and licensing information about all government approved animal drugs. The digital publication will now be included in the ISI's on-line

awareness database called Current Web Contents. Current Contents, a database that provides information in the fields of science, social science, technology and the arts, recently created Current Web Contents, which features a daily update of the database and an option to link to selected and evaluated websites. Following passage of the Generic Animal Drug and Patent Term Restoration Act in 1988, the laboratory began publishing a print version of the *FDA Green Book* in 1989 and has published it annually ever since. The lab manages the Food and Drug Administration Center for Veterinary Medicine's Approved Animal Drug Database which is used to produce both versions of the *Green Book*.

The reference guide includes information concerning animal drugs' trade and generic names, label indications, patent information, and other related facts.

Robert A. Martin, director of the VMRCVM Veterinary Teaching Hospital, has been named president of the American Association of Veterinary Clinicians (AAVC). That 600-member organization includes veterinarians based at colleges, institutions and veterinary practices who are engaged in teaching, service, and/or research in clinical veterinary medicine. As president-elect, Martin served as program chair for the recent AAVC forum held in Seattle in conjunction with the annual meeting of the American College of Veterinary Internal Medicine. He will also plan and preside over an upcoming conference in Arlington, Virginia entitled "Education in the 21st Century" that will focus on the value of practice-based clinical education.

The AAVC operates the Veterinary Internship/Residency Matching Program and provides programmatic leadership for veterinarians seeking post-DVM training in internal medicine, surgery and other specialties.

David S. Lindsay, associate professor, Department of Biomedical Science and Pathobiology, was presented the Henry Baldwin Ward Medal for 2000, the most distinguished honor conferred by the American Society of Parasitology. Lindsay received the award during the society's annual meeting in San Juan, Puerto Rico in June. Lindsay has been a major figure in international parasitology research for much of the past two decades. He has most recently been recognized for his work as part of a USDA-funded team that made a major breakthrough in the understanding of an economically significant parasitic disease afflicting cattle.

Lindsay is also working on an improved diagnostic test for Equine Protozoal Myelitis (EPM), a fairly recently identified disease which causes a range of neurological problems in horses.

Scientists in the VMRCVM Laboratory for Neurotoxicity Studies (LNS) and the Immunotoxicity Risk Assessment Laboratory (IRAL) are well under way on an almost \$1-million research contract from the U.S. Army designed to assess how stress and two chemical compounds may affect health. The chemicals studied include chlorpyrifos, which is commonly used in insecticides, and triorthotolylphosphate, commonly used as an additive in everything from jet fuel to plastics and lubricants. Faculty members involved with the project include **Bernie Jortner**, professor, **Marion Ehrlich**, professor, **Steven Holladay**, associate professor, and **Hara Misra**, professor, all in the Department of Biomedical Sciences and Pathobiology. The work is directly related to efforts undertaken by military, government, and medical officials to critically examine what has been referred to in the media as "Gulf War Illness." Victims of Gulf War Illness report a number of maladies, ranging from malaise to neurological disorders and immuno-suppression.

THEORETICAL

Continued from 1

Physics Letters), acting not only as a switch but also as an amplifier. *Nature* columnist Philip Ball hailed the work in a "Science Update" article titled "Painless Gain" (*Nature*, June 2, 2000).

The transistor's role as an amplifier is critical to ensure that signals remain strong as they pass from place to place. "So far, obtaining gain from a single-molecule device has been a big stumbling block for molecular electronics," Ball wrote. "Now Massimiliano Di Ventra...and his colleagues have shown that this hurdle is, in principle at least, surmountable."

Benzene is a common molecule made up

of six carbon atoms forming a hexagon on a plane. It is abundant and cheap to manufacture. Di Ventra, Sokrates Pantelides, a colleague in physics and astronomy at Vanderbilt University, and Norton Lang of the IBM Research Division in New York, did a computer simulation of a benzene molecule between two electrodes (the source and the drain) and applied an electric field perpendicular to the molecule (the gate field).

In the theoretical simulation with the benzene ring molecule, the drain and source are two gold electrodes connected to the benzene molecule by sulfur atoms. The gate consists of two charged metal disks above and below the molecule and between the electrodes. The electrons flow from source to drain, but the gate field can

be adjusted to control the electron flow.

With low voltage at the gate field, there is a very low probability of electrons tunneling across the molecule, Di Ventra said. By increasing the gate field an "electronic bridge" is formed between source and drain and electrons can tunnel across the molecule easily, allowing a large current flow. This electronic bridge is called "resonant-tunneling." Thus, the molecule acts as a switch, and the signal is amplified by the gate as in conventional field-effect transistors.

"Now, tunneling destroys chips if they are too crowded, but, with molecules we can use the phenomenon to our advantage," Di Ventra said. "We demonstrated that single molecules can do the same job as transistors. But these

single elements need to be combined to form molecular chips. This is a major technological problem. It is like in the 1940s when the transistor was invented: It took 25 years before transistors could be put together in integrated circuits."

"The next step in molecular electronics is to develop molecular chips that will replace the ones we use in our computers," he said.

See another article about Di Ventra's work in the National Partnership for Advanced Computational Infrastructure's *EnVision Science* magazine, at www.npaci.edu/envision/v16.3/pantelides.html.

De Datta earns national and international honors from societies

By Jeanne M. Garon

Surajit K. De Datta, director of Virginia Tech's Office of International Research and Development and associate dean of the College of Agriculture and Life Sciences, has been named a 2000 fellow of the Crop Science Society of America.

The honor was bestowed on De Datta at the annual Tri-Societies meetings of the American Society of Agronomy, the Soil Science Society of America, and the Crop Science Society of America. De Datta also received the 2000 International Service in Crop Science Award from the Crop Science Society of America at the meetings, which were held in Minneapolis.

The awards recognize De Datta for his contributions to the Green Revolution in Asia for his work in rice beginning in the 1960s. The Green Revolution brought about a major revolution in agricultural productivity through the development of improved cereal varieties, new fertilizer regimens, and improved cultural practices in crop management. De Datta's advances enabled vast increases in rice productivity, which in turn have had a worldwide impact felt most strongly in developing countries.

De Datta's national and international awards also recognize his other career accomplishments, including his leadership of Virginia Tech's Office of International Research and Development (OIRD), where he has garnered \$57 million in contracts, grants, and coopera-

tive agreements during his tenure.

De Datta's initiation of collaborative research, education, and technical assistance has contributed to Virginia Tech's ranking by the National Association of State Universities and Land Grant Colleges as among the top five universities in United States Agency for International Development-funded projects in agriculture and natural-resource management.

De Datta's other awards from the Tri-Societies include the 1979 Fellows Award from the American Society of Agronomy and the 1985 Fellows Award from the Crop Science Society of America. Among the Tri-Societies' 13,000 members, he is the only one to have received the International Service Awards in soil science, agronomy, and crop science, which he earned in 1986, 1985, and 2000, respectively. In 1998, the College of Tropical Agriculture and Human Resources at the University of Hawaii honored him as a distinguished alumnus.

De Datta has graduated 77 M.S. and Ph.D. students from 23 countries, many of whom have later served in top international posts, including chancellors and vice chancellors of major international universities, national ministers of agriculture, and executive officers of international-development banks.

De Datta has served as OIRD director since 1991 and as associate dean of the College of Agriculture and Life Sciences since 1993.

Libraries offer on-line reference

University Libraries has introduced a new on-line reference service called "LiveRef," which allows individuals to ask questions and get answers in real time from the reference staff in Newman Library.

LiveRef is an experimental service and will be available initially weekdays from 1-5 p.m. LiveRef supplements the library's e-mail reference service, "AskUs."

To use either service, go to the library's home page and select the "Ask-a-reference-question-on-line" link in the "Research" section at <http://www.lib.vt.edu/research/liveref.html>. The intent of LiveRef is to provide quick answers or to get someone started in the research process. For more extensive assistance, the library's walk-in reference service or consultation appointments with the library's "college librarians" may be more appropriate. Send any questions or comments about on-line reference to Linda Richardson, head of reference and branch services at lindrich@vt.edu; 1-9224.



Stanley Burke

Stanley Burke, from agricultural technology, is the winner of a hanging basket of Swedish ivy named by the Horticulture Department. His name was drawn from all of those who submitted pledge cards to Gloria Smith through October 30.

To receive CVC materials, contact Smith at 1-7810 or at ggsmith@vt.edu.

FACULTY

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in 1979 after earning his doctorate at Michigan State University. He also holds a bachelor's degree in agriculture from the Aristotelian University of Thessaloniki, Greece. He is recognized as a leading researcher in the area of chemical manipulation of crop tolerance to herbicides as well as in herbicide action and metabolism. During his 20 years at Virginia Tech, he has generated competitive funds of more than \$1.1 million for the support of his research and scholarly programs and activities. He has authored or co-authored more than 300 publications, including four books, 87 refereed

journal articles, seven refereed reviews, 16 book chapters, 10 reviewed proceeding papers, two monographs, and 168 abstracts. He also has presented 58 invited talks, half of which were made in international conferences or institutions.

His other awards include the Southern Weed Science Society's 1997 Scientist of the Year Award; the Weed Science Society's 1995 Fellow Award, 1994 Outstanding Research Award, and 1986 Young Weed Scientist Award; and the 1985 Outstanding Faculty Research Award from the Virginia Tech chapter of Gamma Sigma Delta, the agriculture honor society.

ILLIAD

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ILLiad system. However, there was no one to support the software at that time. The breakthrough came when VTIP entered into an agreement with Atlas Systems, Inc. to provide future development and technical support for the ILLiad software. Atlas Systems is a Virginia company started by the original programmer of the ILLiad system.

Dan Specht, business manager at VTIP who handled the marketing of the ILLiad system, said "finding Atlas Systems was really the key to the whole deal. Software without technical support or enhancements to keep it current has a very limited value. We were lucky to have a company founded by the initial developer available to take on this role."

With the support and development agreement in place, VTIP began licensing the ILLiad system, completing over 40 licenses in just under two years. Some of the facilities licensing the ILLiad system included California Institute of Technology, Cornell University, the University of North Carolina, Harvard Medical School, Brigham Young University, and Case Western Reserve University.

"I think this rapid success and the caliber of schools we were able to attract is what put us on the scope at OCLC. After one demonstration at the OCLC headquarters, they were talking about how they could benefit from having access to the software," Specht said.

Kriz believes that ILLiad's commercial success is due to three major factors rooted in Virginia Tech's approach to innovation. First, the university's training programs in process improvement led the ILL department to envi-

sion ILLiad as a conceptual model of the inter-library-loan process. This conceptual model was later implemented in software. This development approach gives ILLiad enormous flexibility and adaptability to the needs of many other institutions.

Second, the clerical staff's enthusiasm for finding innovative ways to improve library public services and for working with new and complex technology drove much of the development process. Finally, the encouragement and very active support of Virginia Tech Intellectual Properties was critical in establishing ILLiad as a viable commercial product.

The terms of the license with OCLC should make it one of the largest in the history of VTIP and will provide significant support to the library, Specht said. But more importantly, now libraries throughout the world will be using a

program developed by the ILL staff at Virginia Tech.

Dean of Libraries Eileen Hitchingham said the creation of ILLiad anticipated the university's increasing emphasis on serving a growing community of faculty members and students who may not always be located in Blacksburg. "ILLiad provides a responsive, interactive means by which students and researchers on Tech's Extended Campus can obtain library materials from the Blacksburg campus libraries or through interlibrary loan from other institutions. We've been able to deliver photocopies and even books to faculty members and students all over North America, in Europe, and in southeast Asia because of ILLiad. I hear more spontaneous rave reviews about ILLiad from faculty members and students than for any other library service I have experienced over my whole career."

RUDD

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and information systems experience, as well as his project management skills and interactive skills with members of the university community, provide him with the qualifications to serve in this role and move the department forward.

One of Rudd's first tasks will be to implement a management-services function within the office.

During December, McCoy will complete his work on audits currently under way, and Rudd will finish commitments to the Banner Finance project to effect a smooth transition in the Internal Audit Department.

In January, McCoy will devote full time to his new role as associate vice president for special initiatives, working with Leonard Ferrari, vice provost for special initiatives.

BOHLAND

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we will be successful if we develop a sense of trust among all groups at Virginia Tech. The creation of a greater sense of trust is one of the important responsibilities that those in administrative positions must assume over the course of the next 10 years."

The university seeks a rating among the top-30 research universities in America as represented in the National Science Foundation's *Survey of Research and Development Expenditures at Universities and Colleges*. This annual report is the primary source of information on separately budgeted research and development expenditures within academia in the United States and outlying areas. The results of the survey are sometimes used to assess trends in R&D expenditures. For more information, see <http://www.nsf.gov/sbe/srslsseeuc/start.htm>.