

SPECTRUM

Virginia
Tech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

TODAY'S EDITION
**Biotech 2001
Conference begins
tomorrow.**

VOLUME 21 NUMBER 34 THURSDAY, JUNE 24, 1999

Swine vaccine developed, approved ACS funds Tech cancer research

By Jeffrey S. Douglas

A genetically altered vaccine developed by a researcher in the Virginia-Maryland Regional College of Veterinary Medicine has received approval from the United States Department of Agriculture (USDA) and is now being commercially marketed as an agent to prevent pneumonia in pigs.

The vaccine, marketed under the trade name "Actinobacillus pleuropneumoniae Attenuate Live Culture" (APP-ALC) by Boehringer-Ingelheim/NOBL Laboratories, is the first avirulent live vaccine ever approved for preventing bacterial respiratory disease in animals, according to microbiologist Thomas Inzana of the college's Department of Biomedical Sciences and Pathobiology.

Swine pleuropneumoniae causes millions of dollars in production losses a year and is one of the most significant bacterial respiratory diseases in the swine industry, Inzana said.

"It can really wipe out a non-immune herd," he said, adding that an infection can destroy up to half of the herd and sicken most

of the others. It's highly virulent characteristics pose a special threat for modern swine-production centers where animals are highly concentrated.

The product development and licensing caps a several-year research effort which was made possible by the dramatic scientific advancements in the field of molecular biology over the past 10 years.

The best immune response is elicited by natural exposure to the pathogenic organism itself, Inzana said. Unfortunately, many vaccines evoke an inflammatory response and infection in the people and animals they are designed to protect.

Working in the college's Center for Molecular Medicine and Infectious Disease, Inzana and colleagues sought to create a

(See SWINE on 4)

By Jeffrey S. Douglas

An institutional research grant awarded to the Virginia-Maryland Regional College of Veterinary Medicine by the American Cancer Society (ACS) has provided several new funding opportunities for junior faculty members and professional students at Virginia Tech interested in conducting cancer research.

The \$127,500 grant will fund two junior faculty researchers at a level of up to \$20,000 each and a professional student at a level of up to \$2,500 for one-year periods during each year of the three-year grant cycle, according to Mitzi Nagarkatti, a professor in the Virginia-Maryland Regional College of Veterinary Medicine's Department of Biomedical Sciences and Pathobiology.

The grant is designed to provide seed money for junior investigators in departments across the university who wish to conduct studies on cancer-related topics to generate the

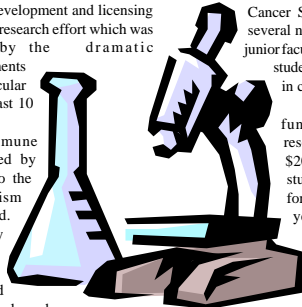
preliminary data required to successfully compete for national funding, according to Nagarkatti.

ACS institutional research grants are normally made to medical schools to support cancer research. Nagarkatti said the VMRCVM is the only veterinary college currently funded with one.

Nagarkatti and husband Prakash of the Department of Biology are among a number of researchers conducting cancer research at Virginia Tech. The Nagarkatti program has received about \$6 million in external funding since the husband-and-wife team joined the Virginia Tech faculty in 1986.

Details on the funding opportunities provided by the grant are available at the American Cancer Society web page (www.cancer.org/bottomresearchprogress.html) or at www.vetmed.vt.edu/college/forms/techcamp/grantforms.html#acs.

Applications should be forwarded to Mitzi Nagarkatti, Department of Biomedical Sciences and Pathobiology, VA-MD Regional College of Veterinary Medicine by August 23.



Biotech 2001 conference features USAF DNA researcher

By Stewart MacInnis

DNA research and how it can help with forensic identifications is the subject of a talk at Virginia Tech's Biotech 2001 conference June 25 by the head researcher for the U.S. Armed Forces DNA Identification Laboratory.

Thomas Parsons, chief of research for the Armed Forces laboratory, is also the head of the lab that identified both the unknown serviceman from the Vietnam War and the remains of Czar Nicholas II of Russia.

The event, which will be on campus, is organized by the university's Fralin Biotechnology Center and Division of Continuing Education, in collaboration with the

National Association of Biology Teachers. It is designed to help science educators keep abreast of scientific discoveries and related developments in biotechnology. High-school and community-college faculty members, as well as other interested persons, are encouraged to attend.

Jane Rissler of the Union of Concerned Scientists will discuss bio-ethics and society's concerns about biotechnology.

David Ayares, vice president for research and development for PPL Therapeutics in Blacksburg, will discuss the potential future benefits of cloning. PPL is the company that cloned Dolly the sheep. Ayares will discuss the differences in cloning sheep, cattle, and mice.

Friday's program also offers several other

scientists.

Bruce Budowle, with the FBI Academy Forensic Laboratories at Quantico, will speak about new DNA techniques in criminal investigations.

Cynthia Dunbar, senior investigator with the hematology branch of the National Heart, Lung and Blood Institute will discuss gene therapy and hemopoietic stem cell research. The National Heart, Lung and Blood Institute is part of the National Institutes of Health in Bethesda, Md.

David Kingston, professor of chemistry at Virginia Tech, will talk about his search for anti-cancer compounds in the plants of Surinam. He uses genetically engineered yeast as a tool in his search. Kingston received the 1999 Achieve-

ment Award from the American Society of Pharmacognosy for his work.

John Donnelly, director of vaccine-adjuvant research for Chiron Corp., will discuss DNA vaccines and direct injection of genes.

Friday's symposium will be preceded Thursday by 12 lectures, discussions, and hands-on workshops for high-school and community-college educators. On June 26 the conference will turn to 16 workshops with an array of innovative activities for the educators to take back to their classrooms and laboratories.

More information is available at <http://www.biotech.vt.edu>, or by calling 1-6934.

University helps make companies competitive

By Catherine Doss

Working in partnership, Virginia Tech's Public Service Programs (PSP), a unit of the university's Outreach Division, American Electric Power (AEP), Wiley and Wilson Corporation, and the Virginia Department of Business Assistance have established three International Organization for Standardization (ISO) 9000 networks of quality-assurance professionals from service industries and manufacturers in southwest Virginia. These networks, located in Roanoke, Christiansburg, and Abingdon, meet quarterly to discuss various aspects of quality standards, to learn from their

colleagues, and hone their international quality-standards skills.

ISO is a world-wide federation of national-standards organizations from more than 130 countries. It is a non-governmental agency established in 1947 with a mission to promote the development of standardization and related activities in the world. ISO facilitates the international exchange of goods and services and helps develop cooperation in the realms of intellectual, scientific, technological, and economic activity. ISO's work results in international agreements, which are published as International Standards. ISO 9000 is primarily concerned with quality management.

"Like beauty, everyone may have his or her own idea of what quality is," said Chad Miller, economic-development specialist with PSP. "The standardized definition of quality in ISO 9000 refers to all those features of a product or service that are required by the customers."

Since the early 1990s, quality-assurance professionals have formed ISO 9000 networks in Verona, Lynchburg, Richmond, and Norfolk. "These networks have evolved to the point where quality-assurance professionals from non-competitive companies audit each other's quality systems," said Roger Beecker, lead ISO assessor for Wiley and Wilson. "This ensures the

(See UNIVERSITY on 2)

Smoking Prohibited in Hancock Atrium

Smoking in Hancock Hall atrium is no longer allowed.

Answering increasing concerns and complaints, President Paul Torgersen has adopted a policy this month that prohibits smoking in the atrium/lounge area between Hancock and Randolph halls.

The university had put smoking off limits in all academic or administrative buildings in April 1997 except for this one location. With this change, smoking is permitted only in residence-hall rooms with permission of both residents.

ACTIVITIES

EVENTS

Thursday, 24

TAUT Play, 7 p.m., Squires Studio Theatre: *The Glass Menagerie*.

Friday, 25

Summer Arts Concert, 6 p.m., Henderson Lawn: Gerry Timlin.

TAUT Play, 7 p.m., Squires Studio Theatre: *The Glass Menagerie*.

Saturday, 26

TAUT Play, 7 p.m., Squires Studio Theatre: *The Glass Menagerie*.

Sunday, 27

YMCA Hike, 1:30 p.m., meet at YMCA parking lot: Laurel Creek.

Wednesday, 30

"With Good Reason" 7 p.m., WVTF: "JFK, LBJ and the Tapes."

JULY

Thursday, 1

Salary and Wage Paydate.

Classes End.

Summer Orientation Begins. Through July 31.

Friday, 2

Exams Begin.

Saturday, 3

Exams End.

Monday, 5

Independence Day Holiday for Faculty and Staff.

Tuesday, 6

Classes Begin.

Wednesday, 7

"With Good Reason" 7 p.m., WVTF: Topic TBA.

Thursday, 8

Last Day to Add.

Parking permits on sale in July

The current 1998-99 parking permits expire on August 13. Permit phone sales are now under way. To purchase a new permit by phone, call 1-2258 Monday through Friday, 8 a.m. to 5 p.m. Visa and MasterCard customers will receive their permits by mail in July or early August. Cash, check, and payroll-deduction customers can order by phone but will need to come by Parking Services at the Visitor Information Center to pick up permits.

Payroll-deduction customers will have to sign the registration form to initiate the payroll-deduction process. Beginning this year, there is a "renew-for-two" offer to purchase a two-year permit that will expire in August 2001. Customers can still purchase permits in person at the Visitor Information Center. Over-the-counter sales of the upcoming

year's permits begin July 26. The office is open Monday through Friday, 7:30 a.m. to 5 p.m., accepting cash, checks, Visa and MasterCard, or payroll deduction, which is available for full-time employees only.

Animal Industry Day scheduled

The thirty-sixth annual Animal Industry Day Program will be held Friday, July 9 at the Virginia Tech Livestock Center. A complimentary beef, pork, and chicken barbecue lunch will be served at noon.

The keynote speaker is Temple Grandin of Colorado State University. Grandin's address will focus on "Understanding Animal Behavior."

Grandin has written about her struggle with autism. Her autobiographical book, *Thinking in Pictures*, reveals mysteries of autism and details how her ability to think in pictures, much like animals, has given her a unique perspective on animal behavior.

Doug Meadows from Lenoir City, Tennessee, will demonstrate and discuss the reining horse.

The afternoon program will target horse, beef, and sheep producers as Virginia Tech faculty members and industry leaders discuss areas of production such as estrous-synchronization systems in beef cattle and nutrient management cycles in sheep.

For more information, contact Dan Eversole at 1-4738.

ACHIEVERS

David Alexander, department head of educational leadership and policy studies, **Shelly Nickols-Richardson**, assistant professor in human nutrition, foods and exercise, and **Josiah Tlou**, associate professor in teaching and learning, were inducted into Phi Beta Delta, the Honor Society for International Scholars, the Gamma Omega Chapter. According to Patrick Carlton, director of International Education and chapter advisor, inductees are selected on the basis of outstanding records indicating an interest and participation in Tech's international mission. "The purpose of PBD is to bring together men and women, faculty and staff members and students who share a common interest in global education," Carlton said. "In addition to honoring and recognizing their efforts, PBD places them in contact with others of common interest for purposes of networking and engaging in activities designed to further the internationalization of the campus."

Don Creamer, professor in educational leadership and policy studies, was selected by the American College Personnel Association for the Contribution to Knowledge Award. The

award was presented in Atlanta at the national convention on March 22.

Joan B. Hirt, associate professor in educational leadership and policy studies, has been an active writer. A book review of "Student Development in College: Theory, Research, and Practice" was published in the *Journal of College Student Development*. She also co-authored journal articles pertaining to "How Students Manage Money" and "An Assessment of Computer Skill Levels Among User Groups on Campus." Hirt also made presentations on "Academic and Social Integration in Cyberspace: How Students Use Email" and "Technology and Diversity: An Impending Collision on the Information Superhighway?" at the annual conference of the Association for the Study of Higher Education.

Major Tim Barnes has been presented the National Defense Industrial Association's Col. Leo A. Codd Memorial Award for the Most Outstanding U.S. Naval ROTC Instructor for 1998. The ranking Marine in the ROTC program at Virginia Tech, Barnes

plans to retire from the military later this year but he is already working on his next career as he is a doctoral student in Instructional Technology.

Sharon A. Brusic received two awards at the International Technology Education Conference in Indianapolis. Brusic was presented the 1999 Distinguished Faculty Advisor Award for "exhibiting high dedication to the organization and the field of technology education. She was also the recipient of the 1999 Mary-Margaret Scobey Distinguished Service Award from the Technology Education for Children Council (TECC), which focuses on technology education at the elementary school level.

Also at the conference, Virginia Tech junior **Andrea Harpine** was this year's recipient of the Outstanding Chapter Service Award by the Technology Education Collegiate Association (TECA). This is presented to a local TECA chapter member for significant dedication, academic achievement, and professionalism by a student who has done the most within their local chapter to foster technology education through local activities. Only one award is presented nationally each year. Harpine is also beginning her term as president of TECA at the international level.

Moses wins 1999-2000 Udall scholarship

By Sally Harris

Shane Moses, a biology major with minors in political science and environmental science, has won the 1999-2000 Morris K. Udall Scholarship.

The award is designed "to encourage responsible use and enjoyment of our nation's resources," according to Terrence L. Bracy, chair of the Morris K. Udall Scholarship and Excellence in National Environmental Policy Foundation.

The scholarship goes to sophomores and juniors throughout the United States and Puerto Rico. The foundation chooses the scholars, nominated by faculty members, on the basis of academic merit. The one-year scholarship will cover the cost of tuition, fees, books, and room

and board up to \$5,000.

This summer, Moses took part in a Tropical Ecology class taught in Costa Rica. Arthur Buikema, who taught the course, said Moses's "background in science and philosophy will make him a formidable leader." Moses, Buikema said, "will be an effective leader in creating change in attitudes about environmental preservation."

Charles Dudley, director of the University Honors Program, says "Shane is an artist and a scientist who has a love of the outdoors that takes him regularly to his beloved mountains. He has the maturity to discuss these aspects of his life with modesty, even though his accomplishments are well beyond the work of

most people his age." Further, Dudley said, "I suspect that one day he will become one of those strong voices for environmental protection—well versed not only in the science, but also in the law."

Moses is a Dean's List student who was named to the President's List for Notable Achievement in 1997. He has been a National Merit Finalist and a Virginia Tech National Merit Scholarship recipient. He has earned awards in engineering from the Virginia Junior Academy of Science, the Blue Ridge Highlands Regional Science Fair, the United States Air Force, and the United States Army Award. He also received the Yale University Science and Engineering Award.

UNIVERSITY

Continued from 1

continual-improvement process, which is the foundation of ISO certification."

The next topic for the southwest Virginia ISO 9000 networks is "Year 2000 Quality Standards." Participants will explore changes that will be required by the year 2000 for ISO certification.

Meetings will be held June 25 in Roanoke, July 30 in Christiansburg, and August 27 in Abingdon. For more information, contact Miller at 1-8324 or by e-mail at chadm@vt.edu.

Fear becomes fascination for entomology grad student

By Susan Trulove

"I'm living proof that people can get over their fear of insects," says Colleen Cannon.

Cannon was in art school when she took a book out of the library that had nice illustrations of insects. In addition to studying the pictures, she read the text. "I learned how interesting insects are." That summer, she took an entomology course that had her in the field collecting bugs. "It was so much fun."

That was it. She'd been "bitten by a bug"—so to speak—to study the life sciences. Cannon went on to earn a bachelor's degree in biology from Queens College. Then she visited Virginia Tech, enjoyed the camaraderie in the entomology department, and became a graduate student.

Entomology Professor Rick Fell suggested Cannon study carpenter ants.

After doing her master's degree research on the wintering behavior of carpenter ants, Cannon decided to bring the insects into a

Virginia Tech lab to study for her doctoral degree research on the insects' foraging behavior. Her desire to maintain a colony of carpenter ants in the lab has resulted in an effective bait to control carpenter ants.

"To maintain colonies in the lab, we had to develop a diet we could feed them," Fell said.

"We had something that was working well when a visitor from the Clorox Company commented on the ants' enthusiasm. I told him that we were working on developing a bait and they asked to become partners in the effort."

That was 1990. "We were interested in doing this research because baits are safe," Fell said. "They use small amounts of toxins and get directly to the target insect. Baits are the growing insect-control technology, but to be effective, you have to understand the insect. It takes basic research on feed, foraging, and physiology."

For six more years, with funding from the Clorox Company, Fell and a team of students studied other aspects of the lives and times of carpenter ants to determine their favorite food, how they eat, how they distribute food to the colony, and how an insecticide could be incorporated.

"To determine their preferences, we looked at all types of sugars, the impact of salts, and various fatty acids, to characterize the things that stimulate them to feed," Fell said.

"Then, to determine how big a particle an ant can eat, we fed them different sizes of fluorescent beads so we could see how small it had to be to pass through their digestive system. We found they can filter particles down to a micron, which is very small," Fell said.

Another important facet in understanding the process is how food is distributed among nest members. The team used low level radioactivity to trace food distribution in the nest.

The researchers began to incorporate an

insecticide. "Our sponsor had one already approved for indoor use that was the correct particle size. We began to incorporate it at very low levels—parts per million—so the ants would have time to carry it back to the nest."

The researchers created a formula that doesn't kill the ants for 10 to 12 hours. Fell said, "We didn't work on the insecticide, but on attraction, dosage, and delivery."

By 1996, a bait was ready to test. The results made some local homeowners very happy. Household tests were done using people who had had problems with carpenter ants for years.

The Clorox Company was convinced and applied for a patent for an environmentally safe bait to control carpenter ants. Patent No. 5,850,707 was issued to Fell and Cannon in December, less than a week after Cannon graduated. A product, Maxforce, has recently been released.

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: Office/Clerical: 1-6196; Technical/Research: 1-6160; Service/Trades: 1-6176; Professional and Managerial: 1-4649; Information Technology: 1-2233. Some of the following positions include state benefits. Positions with numbers beginning with a "W" are hourly and do not include state benefits. Comments about this shortened listing should be made to perserv@vt.edu or by calling 1-5301 or 1-6258 for persons with hearing impairments. Individuals with disabilities desiring assistance or accommodation in the application process should call by the application deadline.

To better serve applicants, the closing date for advertised positions has been changed to 1 p.m. Monday unless otherwise stated. An EO/AA employer committed to diversity.

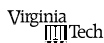
Full Time

Agricultural Supervisor, 3214M, Grade 7, Dairy Science.

Animal Care Technician B, 0761J, Grade 5, Veterinarian and Animal Resources.

Auditor—Internal, 2335T, Grade 11, Auditor—Internal.

Business Manager A, 607P, Grade 10, Electric Service.



VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Spectrum, a faculty-staff tabloid, is published each Thursday during the academic year, with the exception of certain holidays, exam weeks, and the summer. Copy deadline is 5 p.m. Thursday. No advertising is accepted.

Spectrum is a non-profit publication of the Office of University Relations: Lawrence G. Hinker, associate vice president for University Relations; David Nutter, associate director for Public Affairs.

Editor

John Ashby, 1-6961

Assistant Editor

Christian Moody, 1-8538

Production Manager

Melinda Shaver, 1-8524

Business Manager

Sherri Box, 1-8819

Letters to the editor and questions for "Ask *Spectrum*" should be addressed to the editor, 105 Media Building, Virginia Tech, Blacksburg, VA 24061.

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).

Computer Systems Engineer, 7440J, Grade 14, Center for Transportation Research.

Computer Systems Engineer, 7444J, Grade 14, Civil Engineering.

Computer Systems Engineer, 355D, Grade 14, Computing Center.

Food Operations Manager A (Assistant Manager), 1033H, Grade 8, Residential and Dining Programs/Dietrich Dining Center.

Food Operations Manager Assistant, 0975H, Grade 6, Residential and Dining Programs/Deet's Place.

Food Operations Manager B/Executive Chef, 0029H, Grade 10, Residential and Dining Programs/Owens Dining Center.

Grounds Lead Worker, 215P, Grade 6, Physical Plant.

Housekeeping Worker, 1138G, Grade 1, Donaldson Brown Hotel and Conference Center.

Housekeeping Worker, 6867C, Grade 1, Physical Plant/Housekeeping Services.

Housekeeping Worker, 1216H, Grade 1, Residential and Dining Programs.

Housekeeping Worker, 1353G, Grade 1, Schiffert Health Center.

Information Technologies Audit Manager, 1735T, Grade 16, Internal Audit.

Laboratory Specialist Advanced, 7455M, Grade 11, Biological Systems Engineering.

Laboratory Specialist, 7390M, Grade 8, Biochemistry.

Office Services Specialist (Office Manager), 7461H, Grade 5, Residential and Dining Programs/Residence Education.

Office Services Specialist (Office Manager), 7462H, Grade 5, Residential and Dining Programs/Residence Education.

Office Services Specialist, 489S, Grade 5, Library.

Oracle DbA, 7433D, Grade 14, Administrative Information Systems.

Painter, 7417P, Grade 6, Physical Plant.

Program Support Technician, 2514B, Grade 6, Personnel Services.

Program Support Technician, 2202C, Grade 6, University Development.

Programmer, 2256D, Grade 10, University Libraries.

Programmer/Analyst, 6887D, Grade 12, Administrative Information Systems.

Research Specialist Senior/Gis Specialist, 7450M, Grade 9, Entomology.

Security Guard (Parking Enforcement Off.), 7042T, Grade 2, Parking Services.

Student Services Coordinator, 0484J, Grade 10, Industrial and Systems Engineering.

Part Time

Animal Care Tech B, W022523M, Grade 5, College of Veterinary Medicine.

Equipment Inventory Asst/Fiscal Assistant, W022627C, Grade 5, Controller's Office.

Executive Secretary, W022330C, Grade 6, University Development/Smith Mountain Lake 4-H Center.

Food Operations Assistant (Server), W022531G, Grade 1, Donaldson Brown Hotel and Conference Center.

Food Operations Assistant A (Dishwasher), W022679G, Grade 1, Donaldson Brown Hotel and Conference Center.

Get Connected Technician, W022615D, Grade 6, Administrative Information Systems.

Health Educator, W022693J, Grade 8, Institute for Community Health.

Housekeeping Lead Worker (Trades Helper), W022081H, Grade 2, Residential and Dining Programs/Culinary Services Maintenance Crew.

Housekeeping Worker, W020190C, Grade 1, Physical Plant/Housekeeping Services.

Housekeeping Worker, W020214G, Grade 1, Schiffert Health Center.

Laboratory Technician Senior, W022700T, Grade 5, Chemistry.

Office Services Assistant, W020272S, Grade 4, Biomedical Science/Vet Medicine.

Office Services Specialist, W022070, Grade 5, Mathematics.

Office Services Specialist, W022170M, Grade 5, Veterinary Teaching Hospital.

Radiologic Technologist, W022412M, Grade 7, Veterinary Teaching Hospital.

Off Campus

Agricultural Inspector, 6425M, Grade 9, Crop and Soil Environmental Sciences.

Distance Learning Specialist, 7410D, Grade 12, Office of Distance Education.

Program Support Technician, 5585M, Grade 6, Virginia Cooperative Extension-King George County.

Secretary Senior, 7296M, Grade 5, Virginia Cooperative Extension-City of Norfolk.

FACULTY POSITIONS

Full position descriptions for faculty listings are available at <http://www.ps.vt.edu>.

INSTRUCTIONAL

President of the University. All correspondence should be received by July 15 and should be directed, in confidence, to Executive Recruitment Consultant: Jerry H. Baker, Partner, Baker, Parker & Associates, Inc., Five Concourse Parkway—Suite 2440, Atlanta GA 30328; e-mail: jbaker@bpasearch.com.

Department of Agricultural and Applied Economics. Assistant/Associate Professor. Applicants should submit a letter of application, curriculum vita, academic transcripts, writing sample, and three letters of reference to David Kenyon, Department of Agricultural and Applied Economics, 307 Hutcheson Hall (0401) Virginia Tech, Blacksburg VA 24061. Phone: 1-6847; fax: 1-7417; e-mail: dkenyon@vt.edu. Screening begins August 31 and continues until position is filled.

NON-INSTRUCTIONAL

Public Service Programs. Economic Development Specialist. Applicants should send a complete resume including personal data, education, publications, research record, and professional experience together with the names of three references to J. Douglas McAllister, Executive Director, Public Service Programs, Virginia Tech, 1080 S. Main St., Blacksburg VA 24061. Fax: 1-3896. Interviews begin immediately and continue until suitable candidate is found.

Development and University Relations. Director of Development for the Corps of Cadets and Class Reunion Gifts. Candidates should send cover letter, resume, and names of five references to Timothy G. Corvin, Senior Director of Development for Capital Support, University Development, 201 Pack Building (0336), Virginia Tech, Blacksburg VA 24061. Applications review begins immediately and continues until position is filled.

Development and University Relations. Director of Development for University Libraries, Student Affairs, and Special Projects. Candidates should send cover letter, resume, and names of five references to Timothy G. Corvin, Senior Director of Development for Capital Support, University Development, 201 Pack Building (0336), Virginia Tech, Blacksburg VA 24061. Applications review begins immediately and continues until position is filled.

Center for Academic Enrichment and Excellence. Assistant Coordinator for Academic Enrichment Programs (2). To apply, submit a cover letter addressing interest along with a resume and contact information for three references to Anita Price, Femoyer Hall (0276), Virginia Tech, Blacksburg VA 24061. Applications review begins July 16.

Center for Academic Enrichment and Excellence. Assistant Coordinator for Student-Athlete Academic Enrichment (2). To apply, submit cover letter addressing interest along with a resume and contact information for three references to Anita Price, Femoyer Hall (0276), Virginia Tech, Blacksburg VA 24061. Applications review begins July 16.

Department of Biomedical Sciences and Pathobiology. Postdoctoral Associate (2). Send curriculum vitae and names of three references to Hara P. Misra, Center for Molecular Medicine and Infectious Diseases, Department of Biomedical Sciences and Pathobiology (0342), Virginia Tech, Blacksburg VA 24061; e-mail: hmisra@vt.edu. Applications accepted until suitable candidates are identified.

Virginia Cooperative Extension. Agriculture and Natural Resources Extension Agent. Position #FA616, Environmental Horticulture, in Rockingham County. Submit letter of intent, complete resume, official undergraduate and graduate transcripts (copies are acceptable), and three letters of reference. Applications review begins July 19 and continues until position is filled. Send to Steve Umberger, Virginia Cooperative Extension, 122 Hutcheson Hall (0437), Virginia Tech, Blacksburg VA 24061. Inquiries: 1-7619; TDD user: 1-800-828-1120; fax: 1-5545; e-mail: csowers@vt.edu.

Printing goes to cost recovery

By Gary M. Worley, director,
Production Services

With the start of the new fiscal year on July 1, all network printing supported through Production Services will be provided on a cost-recovery basis. This support includes files submitted through the mainframe or files routed to the Docuprint from Banner applications or desktop computer software. Information related to this change as well as information on distributed printing is available on the web page at www.mps.vt.edu.

Over the past year, each division of the university was contacted related to this change in operations. At that time each department was requested to establish a printing account by submitting an active Banner fund code to Printing Services. These accounts will be debited as print requests are made to recover the costs for printing support. As a result, departments will receive monthly statements describing printing activity for each month of the fiscal year and billing

information for the number of pages printed.

It is important for these accounts to be in place before the start of the new fiscal year. With the implementation of cost-recovery printing, Printing Services will no longer be able to print files that do not correspond to active printing-account fund codes. Files submitted without fund codes will not be printed until a printing account is established or an interdepartmental printing request (IPR) is provided to cover the costs for printing.

Many departments have already responded; however, a large number of users do not currently have active accounts. If department personnel are uncertain that an account exists, they can check with Printing Services or use the form on the web page to submit the proper information identifying the account code to be used for centralized printing.

Printing Services can be reached by phone at 1-6701 between the hours of 8 a.m. and 5 p.m. each workday or through the web server.

Giovanni publishes *Grand Fathers*

By Sally Harris

"Open this book and forty-seven grandfathers come into your life...."

Nikki Giovanni, nationally known poet and professor of English at Virginia Tech, has edited a companion book to *Grand Mothers*, called *Grand Fathers*. Its subtitle tells its contents: *Reminiscences, Poems, Recipes, and Photos of the Keepers of Our Traditions*

The collection is multi-cultural and inter-generational. In it, grandchildren talk about all sorts of grandfathers. "Grandfathers have seen it all," Giovanni says in the introduction. "The wars and the weapons of war. The hurts and the harm of hate. Grandfathers hope for us. Wish for us. Sing our song. Cross their fingers that they were good fathers. Cross their fingers that they will be better grandfathers."

The book contains stories of Giovanni's own grandfather, the grandfathers of poets and priests, writers and scholars, radio hosts and lawyers, librarians and photojournalists, record producers and chemists. The writers include famous people such as poets Giovanni and Rita Dove and people from all walks of ordinary life, including those who live at Warm Hearth Retirement Village where Giovanni conducts a writers' workshop.

"This collection is not definitive," Giovanni said. "It is not all grandfathers. But it does show us the mostly good, sometimes not-good person we love."

The grandfathers come in all types. There's

the one who exhibits the "silence of love that gentles the heart and makes the voice stick in the throat." There is the granddad who "must have been born a saint," who "was deeply religious and probably never broke a law—God's or man's." There's the grandfather whose "life bridges the gap between slavery and African-American determination to move from backseats." And the one who left his granddaughter memories of dancing, from the day she was four when "he grabbed my little hand and did the schottische in the living room, a kind of summery music in the background, coming from the old Victrola, tickling our hearts."

One writer describes the devastation of his grandfather's becoming blind, unable to "see the faces of his children or behold the beauty of nature again," but using his grandson's "mind as a tape recorder." One person wrote of his grandfather, "Just before he died at the age of eighty-five, my grandfather began to remind me of Yoda, the Jedi Master of the *Star Wars* trilogy. "Not only did he look a little like Yoda, he seemed to have something of Yoda's crankiness, not to mention his wisdom."

"I hope," Giovanni wrote, "this collection will encourage young people to solve some of their families' mysteries. I hope that the young will ask questions and listen to answers spoken and unspoken." Grandfathers, Giovanni said, more than any other males, "let us see what loving relationships should be."

Grand Fathers was published by Henry Holt and Company, Inc. of New York and is available at bookstores.

Dennis L. Eavey, 50

Dennis L. Eavey, a senior manager in Personnel Services, died Sunday, June 13 at the age of 50.

Eavey graduated with a BA in economics from Emory and Henry College 1971. Before coming to Virginia Tech in December 1977, he worked for Smith's Transfer Corporation and Electro-Tech. At Tech, he started as a training supervisor in Personnel Services.

Eavey was one of the originators of the university's service-awards program, which celebrated its 21st anniversary this year and was the first awards program created by a Virginia state agency. For the past five years, he served as a senior manager responsible for human-resource consultation services in areas of employment, recruitment, training, and employee relations. Eavey also assisted in forming staff governance structures.

Associate Vice President Emeritus Ann Spencer said of Eavey, "He brought a calming presence to groups or issues he worked with. Typically, he was a man of few words, but when he spoke, you knew that much thought had gone into what he had to offer. We will always remember our quietly compassionate colleague and he will be greatly missed by the personnel department and the university."

Linda Woodard director of Personnel Services said, "All of Dennis' relationships, whether personal or professional, were characterized by caring, respect, and trust. He was always able to

find the right path through difficult issues and troubling times, and he helped me and others through the principles and values he shared with us. He brought joy and laughter to our department's daily work and life activities. His humor created a strong bond with so many people, each of whom felt special because they could share in his joy."

From Judy Ridinger, human-resources manager, who said of Eavey, "Dennis has been my co-worker, colleague, mentor, sounding board and most important of all, friend. His vision and ideas will remain with me, the other human-resources consultants and his colleagues in Personnel Services for a long time to come."

Executive Vice President Minnis Ridenour said, "During his years at the university, Dennis provided excellent leadership throughout our personnel department. His expertise in the area of employee relations, and in particular employee training programs, was a valuable resource as he worked with numerous departments and employees across the university. His thoughtfulness and personal touch will be missed by many throughout the university community."

Eavey was also an active member in New River Valley Society for Human Resource Management, and has served on a number of state advisory committees.

Theatre alum returns for research

By Sally Harris

With the touch of a computer key, Michael Chien can change the brightness of an entire stage. Another keystroke and the scene changes hue. Another brings a character to the stage to see how different colors and lights illuminate it. Another key and Chien can see how the shading affects the person's face. This is virtual lighting, and it is changing the way theater designers work.

Chien, who earned an MFA degree at Virginia Tech in 1991, returned to do research this year, but he has had a wealth of experiences in the meantime. After earning a B.A. in drama and cinema from the Chinese Culture University in Taipei, he served two years in the Army, where he was assigned to be in charge of lighting for the entertainment troupe that traveled to Army camps. Doing 30 variety shows each month, a different one each season, was a challenge, Chien said.

After that, Chien taught drama and television in a Taipei high school, teaching lighting, acting, and stagecraft. He came to Virginia Tech in 1988 to serve an assistantship with Randy Ward of the theatre-arts department.

"The good thing about the program [at

Virginia Tech]," Chien said, "is that it is individually designed for students instead of having set classes they have to take." The students build a program according to their abilities, weaknesses, and strengths, he said.

Chien's major focus was on light design and technical directing. "But throughout my years here, Randy Ward pushed me toward set design, so I did drawings and paintings, took classes from art and agriculture (welding). It was fun to have a variety of options that I could learn from more than regular theater programs."

In 1991, Chien earned an M.F.A. in lighting and design, moved to Los Angeles for six months, then returned to Taiwan. By February, he had a full-time position as technical director for the National Theatre in Taipei. In six months, he was promoted to head of the performance section, which included four spaces for opera, experimental theater, concerts, and recitals. "Performance section maintained all the equipment and crews to run the shows," Chien said. "I had 70 crews working under me." The complex ran year round and offered about 500 shows per year.

After a year and a half, Chien grew tired of desk work, documents, phone calls, and meetings. He took an offer from the theater department of the National Institute of the Arts, where he has been teaching ever since. He helped start a new program called the Theatre Design and Technology Department. He does the lighting design for three or four commercial productions each year. "By teaching, I refresh my memories and skills," he said.

At the institute, when a person has taught for seven years, he gets a year off with pay. Chien also was accepted into a program that allows him to do research overseas and still receive his salary and additional funding from a cultural foundation in Taiwan. He came back to Virginia Tech.

"The program here is flexible and individual enough that it allows me to explore more than a regular theater program can be expected to do," Chien said. "Now I can go home and compete with those trained at Yale, NYU, and all other major theater programs."

SWINE

Continued from 1

genetically altered live vaccine for swine pleuropneumonia, which is caused by the bacterium *Actinobacillus pleuropneumoniae*. Inzana determined that the carbohydrate capsule of the bacterium is required for virulence, but not immuno-protection. In contrast, only live bacteria produce the native toxins required for immuno-protection. By mutating the capsular DNA he was able to select for a stable, non-encapsulated vaccine strain that confers excellent immunity in pigs with minimal side-effects.

He believes the technique can also be used to create vaccines against *Pasteurella multocida* and *P. (Mannheimia) haemolytica*, the other agents of "shipping fever" in cattle.

The United States Veterinary Biological Product License granted by USDA can be viewed as a significant step forward in the development of live attenuated vaccines for the treatment of respiratory diseases in animals, Inzana said.

