

# SPECTRUM

**TODAY'S EDITION**  
See page 2 for  
information on staff-  
mentoring program.



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

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

VOLUME 23 NUMBER 38 FRIDAY, AUGUST 3, 2001

## Nanoscience research earns awards for faculty members

By Susan Trulove

Promising research to develop transistors from molecules and wireless transmitters as small as a few hundred atoms has earned Virginia Tech faculty members Massimiliano Di Ventra in physics and Stephane Evoy in electrical and computer engineering each a Ralph E. Powe Junior Faculty Enhancement Award from Oak Ridge Associated Universities (ORAU).

The Powe award recipients received \$5,000 each in unrestricted research funds from ORAU, which is matched by Virginia Tech. The Powe awards provide seed money for research by junior faculty members at ORAU member institutions. Each institution may only submit two applications.

"Virginia Tech is a double winner," said Ron Townsend, ORAU president. "Based on your research, we never doubted you were going to be winners. I'm proud to present this award to people of your calibre."

Reporting that Oak Ridge National Laboratory is proposing a nanotechnology lab, Townsend said that Di Ventra and Evoy will be important collaborators.

Evoy said nanotechnology is a broad and interdisciplinary area of research that has been growing explosively world wide in the past few years. A nanometer (nm) is one-billionth of a meter or about the size of 10 atoms. "Working with materials on that scale has the potential for revolutionizing the ways in which materials and products are created, and the range and nature of

functionalities that can be accessed," he said. "The dimension reduction has provided previously unavailable functionalities in many areas, such as access and engineering of quantum phenomena in opto-electronics and higher speeds and reduced power consumption in micro-electronic systems."

Evoy specifically investigates nanoscale mechanical structures. "Dimension reduction in mechanical systems bestows higher resonant frequencies, potentially greater durability, and ultra-sensitive detection of forces," he said. "Specifically, a nanomechanical beam with lateral dimensions of tens of nanometer (a few hundreds of atoms) would resonate in the gigahertz range (oscillate one billion times per sec-

(See NANOSCIENCE on 3)

## Politis appointed Business Technology Center director

By Sookhan Ho

Virginia Tech's Pamplin College of Business has appointed John L. Politis as director of the Business Technology Center.

Politis joins the university from Bucknell University, where he directed the Small Business Development Center and the Product Development Center. He has more than 20 years experience in business, including the founding of two successful small businesses.

In addition to marketing and business-development responsibilities at several technology-based companies, Politis has worked at the Naval Research Lab, the National Security Agency, and the Defense Communications Agency.

He received a B.S. in electrical engineering from Penn State University, an M.S. in electrical engineering from Fairleigh Dickinson University, and an M.S. in management science from the University of Southern California.

At Bucknell, he implemented a comprehensive technology-development plan for new and growing businesses, promoted community awareness of the SBDC, and increased student and faculty participation in its activities.

As BTC director at Virginia Tech, Politis will promote the center's comprehensive services to emerging technology-based organizations.

Unlike other business-assistance programs, the center focuses on supporting Virginia's technology businesses. The center matches clients with qualified and experienced consultants, including Virginia Tech faculty members and students, and serves as an on-going mentor to clients.

(See POLITIS on 3)

## Rat genes increase vitamin C in plants

By Netta Benton

Genes from the lowly rat may hold the key to increasing vitamin C in the world's food supply. Craig Nessler, head of plant physiology, pathology, and weed science, has found that by transferring certain rat genes into lettuce, he can turn on the plant's latent vitamin-C-producing pathway. In laboratory experiments using that process, he increased the level of vitamin C in lettuce by 700 percent.

But Nessler said we shouldn't expect to see the rat-altered lettuce in grocery stores. "We realize that a plant altered by a rat gene wouldn't appeal to consumers."

He and his colleagues are using what they've learned from the rat-gene work to try to discover other ways to stimulate the vitamin C gene in lettuce and other plants.

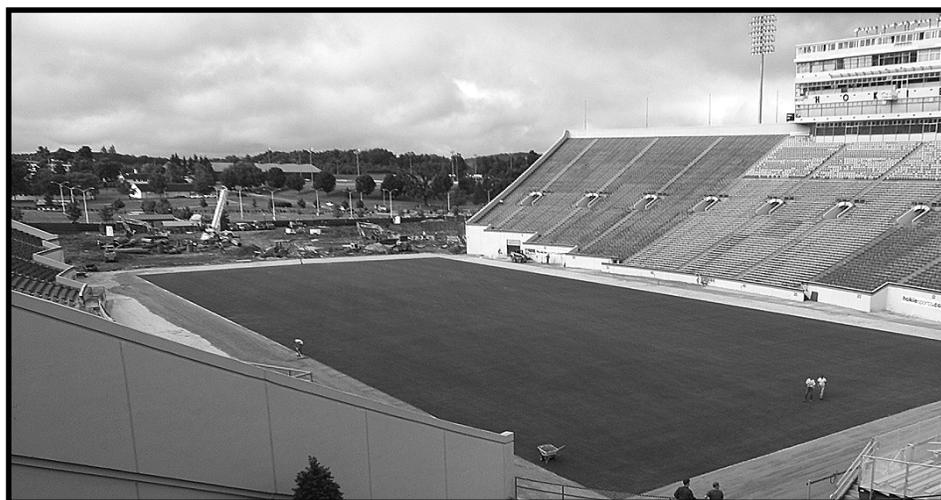
Nessler chose to use rats in his research because the gene was readily available and rodents are natural producers of vitamin C.

"The reason sailors on their way to the new world got scurvy while rats thrived was because humans have lost the ability we once had to make our own vitamin C, while rats have retained it," he said. Humans still have the gene, but a genetic defect has rendered it inoperative.

Nessler said his work is a specific way to do what nature has been doing throughout the earth's history—the hybridization of plants. "Nature does it by chance, and farmers have been doing cross-pollination by hand for years," he said. "But now we have the ability, through biotechnology, to be very specific in what new traits we introduce into plants."

According to Nessler, the method plants use to produce vitamin C is virtually unknown to scientists. They do know, however, that the vitamin serves as a preservative, and theorized that if they could increase the level

(See RAT on 4)



**SOUTHSIDE STORY** Construction has begun on the south-side stadium project. When completed in 2002, the stadium addition will feature more than 11,000 seats, club seating and suites. The field, which has been completed, is now made up of 4,600 turf trays. (R. Griffiths)

## Off-Campus Agricultural Research and Extension Centers Remain Busy

By Netta Benton

In contrast to the slower pace of life on campus during the summer, activity at the university's 13 off-campus Agricultural Research and Extension Centers (AREC's) is at a peak. The sites, totaling nearly 4,300 acres (2,620 acres of state-owned land, 1,675 acres of leased land) represent Virginia's diversity and take advantage of the unique characteristics and challenges found in each location.

Faculty and staff researchers and agricultural workers at the centers are in the midst of their busiest season. In cooperation with faculty members based on campus and area Extension agents, they're conducting and evaluating cultivar trials and other research projects, harvesting crops, planning new projects, and presenting their findings to agricultural producers, agribusinesses, and the general public.

Virginia's diversity in land, climate, soils, and agricultural production areas require diverse agricultural programs that meet the needs of producers, consumers, and the general population. Production of crops and livestock occupy 8.7 million acres of farmland. Forestlands of 15.2 million acres support important wood-based industries as well as hunting, fishing, and other recreation. And agricultural and forestland activities directly impact the state's 350,000 acres of wetlands.

Research and educational programs conducted at the AREC's address these areas of concern. Projects range from work with corn and small grains to cotton, vegetables, tobacco, fruit, alternative crops, and peanuts; from soils, wildlife, and forest products to nursery and landscaping trees, shrubbery, and plants; and from seafood and aquaculture to forage, Thoroughbred horses, cattle, sheep, and swine. Other projects focus on integrated pest

(See OFF-CAMPUS on 4)

## Trauger named natural-resources programs director

By Lynn Davis

David L. Trauger, who has joined the Virginia Tech faculty in the Department of Fisheries and Wildlife Sciences, has been named professor and the new director of the natural resources programs at the Northern Virginia Center. He succeeds Jerry Cross who served as half-time director from 1997 until he retired in 2000.

The Northern Virginia Center has 2,200 graduate students enrolled in 45 degree programs at Falls Church. Virginia Tech's College of Natural Resources currently offers several graduate courses leading to a Certificate of Graduate Studies in Natural Resources.

Trauger will direct teaching, research, and outreach programs focusing on sustain-

(See TRAUGER on 4)

# ACTIVITIES

## EVENTS

**Wednesday, 8**

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

**Thursday, 9**

Classes End.

**Friday, 10**

Exams Begin.

**Saturday, 11**

Exams End.

**Thursday, 16**

Salary and Wage Paydate.

Staff Senate, noon, 1810 Litton-Reaves.

## BULLETINS

### Non-credit on-line course offerings listed

Non-credit on-line course offerings are now listed with credit on-line course offerings on the new VTOline at <http://www.vto.vt.edu>. These non-credit on-line courses, developed as part of VTalumnNET, are available at varying fees to faculty and staff members and students to improve job skills or for personal development. Current course offering areas include business, finance, gardening/landscaping, computer basics, technical web development, advanced computer networking and databases, marketing, and architecture.

VTOline is Virginia Tech's comprehensive electronic catalog of distance and distributed learning programs and courses. VTOline provides a complete listing of the university's on-line and interactive videoconferencing (IVC) programs, certificates and courses, sites where offered, technical requirements, registration and payment processes, distance-learner orientation, available learning resources and technical support. For more information on Virginia Tech's distance-

learning program, see <http://www.iddl.vt.edu>.

### Parking Services in new location

Parking Services has relocated to building 455 on Tech Center Drive (the old Photographic Services building on the left side of the road to the CRC). All parking operations and services are now at the new location (including permit sales and ticket appeals) with the exception of visitor permits, which will still be handled in the Visitor Center on Southgate Drive.

### Leave donations requested

A Virginia Tech employee in Dining Programs has requested leave donations. Other university employees in Recreational Sports and Cooperative Extension have also requested leave donations.

Salaried classified employees or 12-month regular faculty members may participate by donating annual leave in increments of eight hours. There is no maximum donation limitation per year,

nor is there a minimum balance that must be maintained. Donation forms can be downloaded from the Personnel Services web site at <http://www.ps.vt.edu/forms/leave/>. Return completed forms to Toni Pimintel, human-resource specialist at Personnel Services.

### Family field walk set for Saturday

There will be a wildflower walk with Tom Wieboldt, associate curator of the Massey Herbarium at Virginia Tech on Saturday, Aug. 11, from 9:30 a.m. to noon.

Participants should meet at 9:30 a.m. at the first parking lot at Pandapas Pond (left off of Rt. 460, approximately six miles north of Blacksburg). This will be a leisurely walk along Craig Creek Rd. to enjoy and identify summer wildflowers. Call the Virginia Tech Museum of Natural History, at 1-3001, to pre-register. This walk is appropriate for school-age children through adult. Minors will need adult accompaniment.

## University's staff-mentoring program begins third year

By Clara B. Cox

Newly placed classified staff members working in pay-band 2 and 3 positions have the opportunity to participate in a mentoring program designed to provide professional support from mentors in existing similar positions. The Mentoring Program for Classified Employees of Virginia Tech, initiated in 1999, will hold its Third Annual kick-off luncheon on August 9.

According to the Mentoring Program Advisory Board, the luncheon will target those mentors identified by membership in the Office Managers Development Group (OMDG), attendees of the June Mentoring Evaluation Program, mentees from last year's program, and any prospective mentors who wish to participate. The event will be held from 11:30 a.m.-1:30 p.m. in Hillcrest Dining Hall at no cost to

participants.

The luncheon program will include a welcome by Kim O'Rourke, executive assistant to the president, and remarks of support and benefit by Benjamin Dixon, vice president for multicultural affairs, and Ellen Plummer, director of the Women's Center.

Employees interested in learning more about the upcoming program or becoming a mentor or mentee should contact Terri Tishman at [ULD@vt.edu](mailto:ULD@vt.edu) or 1-6727 today.

One of the objectives of the program is to facilitate initial and continuing professional support to Virginia Tech classified employees within pay bands 2 and 3. Other objectives of the program are to enhance a communication network within the office-managers profession, to encourage present staff members in office-

management positions to exercise leadership skills, to provide an opportunity for cross training and shared learning between departments and colleges as a method of improving the quality of service, and to maintain a reference handbook that includes URL's and contact information concerning Virginia Tech policies and procedures.

The program provides a significant opportunity for new employees to gain a comfort level in their work and allows them access to an already-existing network of experienced office managers.

The first phase of the program received \$1,500 in grant support. The numbers of matches nearly doubled during the second phase, which received funding of \$2,500.

This year, efforts will be made to move the program from grant status to an on-going university program. The original committee that operated the program has expanded to an advisory board with seven initial staff members and one ULD representative.

The program is supported by the Office Managers Development Group, University Leadership Development, Office of Multicultural Affairs, Personnel Services, and the dean and staff association of the College of Arts and Sciences.

For more information on the project, contact an advisory board member: Robin Atkins, Holly Butler, Shelia Collins, Carolyn Dudding, Jessie Eaves, Delbert Jones, Terri Tishman, or Steve Van Aken, or visit the program web site at <http://uld.vt.edu/4.10programs.html>.

## High-school teachers learn genomics, molecular biology

By Stewart MacInnis

Eight high-school teachers from across the state participated in an in-depth workshop on campus to help them teach about genomics and molecular biology.

The intensive two-week workshop included not only hands-on laboratory training, but also discussions concerning ethical issues arising from advances in genetics, the emerging discipline of bioinformatics, the creation of DNA vaccines, and health-related research going on at the university.

Kara Lewallen, a college-level biology teacher at Randolph-Macon Academy in Front Royal, said what she learned in the workshop will benefit her students.

"There is no question that this will enhance our program," she said. "It would be great if we could start our own semester program in biotechnology. There just is no way we can cram all I learned these two weeks into an

advanced-placement course simply because of the time crunch."

Ed Smith, associate professor in the Department of Animal and Poultry Sciences, said the depth of the program was designed to challenge the teachers.

"This was an experiential program," Smith said. "It was very intensive, which is why we limited the number of participants to eight. Any more than that and it would have been too much for us."

Smith and Eric Wong, also an associate professor in animal and poultry sciences, were the lead instructors during the workshop. Joining them for special issues sessions were Doris Zallen, professor in the Center for Interdisciplinary Studies; Cynthia Gibas, assistant professor of biology; and Elizabeth Grabau, associate professor plant pathology, physiology, and weed science. Also participating were Steve Boyle, professor of

biomedical sciences and pathobiology; and Barbara Davis, assistant professor in the Department of Human Nutrition, Foods, and Exercise.

The program was structured in such a way as to help the teachers cover the requirements in the state's Standards of Learning while teaching the concepts of genomics and molecular biology, Smith said. Leading the session on integrating SOL requirements into the curriculum was Leslie Ann Pierce, a teacher at T.A. Edison High School in Fairfax County and a member of the committee that drafted the SOL for high-school biology.

Eric Wright, a biology teacher at Spotsylvania High School, said the workshop gave him ideas on how he can make scientific concepts concrete for his students.

"Science is made in the lab," he said. "By attending this program, I was able to learn some concepts and techniques I didn't have the

opportunity to learn before. The faculty members here were open and supportive from the get-go. They treated us as colleagues, which made the who experience very enjoyable."

Smith said a similar workshop is planned for next summer thanks to a grant from the U.S. Department of Agriculture. As the only member on the National Institutes of Health genome study section from a land-grant university, Smith has initiated discussions with NIH to pick up the program after USDA support ends in 2003.

Both Smith and Wong hope that in the long run this program will help change the image many high-school students currently have that animal science is the career path only to veterinary science and animal husbandry. They want to broaden the image of animal science as a path that also leads to basic and biomedical research.

# EMPLOYMENT

## CLASSIFIED POSITIONS

The following classified positions are currently available. More details of these positions, specific application procedures/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/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

**Four** full-time food-service positions available.

**Assistant Manager**, 001205H, Pay Band 3, RDP/Hokie Grill.

**Chemical Safety Trainer**, 007491Y, Pay Band 4, EHSS.

**Communications Officer**, 001567Y, Pay Band 3, Police.

**Food Production Supervisor**, 000549H, Pay Band 1, RDP/Hokie Grill.

**Grants/Contracts Fiscal Coordinator**, 007765J, Pay Band 3, CHRE.

**Highway Equipment Operator A**, 000543F, Pay Band 2, Physical Plant.

**Housekeeping Worker**, 000268H, Pay Band 1, RDP/Facilities and Services.

**Housekeeping Worker**, W022490H, Pay Band 1, RDP/Facilities and Services.

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

**Industrial Hygiene Technician**, 007802G, Pay Band 3, EHSS.

**Industrial Hygienist for Chemical/Biological Hazards**, 007002Y, Pay Band 5, EHSS.

**Instructional Technology Systems Integrator**, 007766S, Pay Band 6, Educational Technologies.

**Laboratory Specialist**, 007707B, Pay Band 3, CE.

**Laboratory Specialist**, 007245M, Pay Band 3, Biochemistry.

**Laboratory Specialist Advanced**, 007735M, Pay Band 4, BSE.

**Laboratory Specialist Senior**, 007645M, Pay Band 4, PPWS.

**Laboratory Technician**, 007799G, Pay Band 2, Biochemistry.

**Locksmith**, 007754H, Pay Band 3, RDP/Facilities and Services.

**News Bureau Manager**, 007195S, Pay Band 3, University Relations.

**Program Support Technician**, W023289R, Pay Band 3, Graduate School.

**Research Specialist**, 007803J, Pay Band 3, Fisheries/Wildlife.

**Research Specialist**, 007790R, Pay Band 3, VTTI.

**Sales/Marketing Manager**, 000478H, Pay Band 3, RDP/Personal Touch Catering.

**Sheet Metal Worker**, 000282F, Pay Band 3, Physical Plant.

**Shopleader Supervisor**, 007404H, Pay Band 1, RDP/West End Market.

**Shopleader Supervisor**, 007797H, Pay Band 1, RDP/West End Market.

**Smart Road All-weather Testing Technician**, 007655R, Pay Band 3, VTTI.

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

**Study Abroad Advisor**, 007607R, Pay Band 3, UOIP.

**Telecommunications Specialist**, 000519A, Pay Band 4, CNS.

**Videoconferencing Operations Technician**, 006920A, Pay Band 3, VBS.

### PART TIME

**Animal Care Technician/Small Animal**, W022675M, Pay Band 1, Veterinary Teaching Hospital.

**Housekeeping Worker**, W022335Y, Pay Band 1, DBHCC.

**Office Service Specialist**, W022120F, Pay Band 2, Physical Plant/Grounds/Recycling/Solid Waste.

**Office Services Assistant**, W020482F, Pay Band 2, Hokie Passport Office.

**Office Specialist**, W022596H, Pay Band 2, RDP/Residential Administration.

**Operations Specialist**, W022862S, Pay Band 2, AIS—IRM.

**Pharmacist (Relief)**, W022501M, Pay Band 6, Veterinary Teaching Hospital.

**Programmer**, W023286S, Pay Band 4, ITA.

**Starter Marshall/Shop Attendant**, W022113J, Pay Band 1, Golf Clubhouse.

**Storekeeper**, W022291M, Pay Band 2, Veterinary Teaching Hospital.

**Trades/Utilities Worker**, W023023H, Pay Band 1, RDP/Culinary Services Maintenance Crew.

**Web Designer**, W022976H, Pay Band 3, RDP/Marketing and Conference Services.

### UNIVERSITY ONLY

**Multimedia Producer/Director**, U000935A, Pay Band 5, VBS.

### OFF CAMPUS

**4-H Program Assistant**, 005862M, Pay Band 2, VCE.

**Court Specialist**, 007352X, Pay Band 4, CPAP.

**Efrep Adult Program Assistant**, 006101M, Pay Band 2, VCE—Arlington County.

**Fiscal Technician**, 007411B, Pay Band 3, Engineering.

**Program Support Technician**, 006168M, Pay Band 3, VCE—Halifax County.

**Program Support Technician**, 005350M, Pay Band 3, VCE—Prince George County.

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

**Scnep Adult Program Assistant**, 006800M, Pay Band 2, Albemarle County.

**Scnep Youth Program Assistant**, 006609M, Pay Band 2, VCE—City of Alex-

andria.

**Scnep/Youth Program Assistant**, 007330M, Pay Band 2, VCE—Culpeper County.

**Scnep/Youth Program Coordinator**, 007233M, Pay Band 2, VCE—Arlington County.

**Secretary Senior**, 006891M, Pay Band 2, VCE—Halifax County.

## FACULTY POSITIONS

### INSTRUCTIONAL

**HNFE. Assistant Professor/Extension Specialist.** Contact: Dianne Yardley, 103 War Memorial (0317). Review begins Oct. 4.

**IDDL. Distance Learning Instructors.** Contact: Miriam Guthrie, 3046 Torgersen (0445). Open until filled.

### NON-INSTRUCTIONAL

**CSES. Professor & Head.** Contact: L.A. Swiger, 104 Hutcheson (0402). Review begins Oct. 1.

**Geological Sciences. Research Associate.** Contact: Patricia Dove, 4068 Derring (0420). Review begins Aug. 6.

**Athletics. Assistant Men's Tennis Coach.** Contact: Pam Linkous, 359 Jamerson (0502). Open until filled.

**Athletics. Cross Country/Distance Coach.** Contact: Pam Linkous, 359 Jamerson (0502). Review begins Aug. 6.

**Agricultural/Applied Economics. Program Associate.** Contact: Lester Myers, 208-B Hutcheson (0401). Deadline is Aug. 15 or until filled.

**University Development. Associate Director of Corporate Relations.** Contact: Rhonda Arsenault, 201 Pack Bldg. (0336). Review begins immediately.

**VCE. Extension Agent, Agriculture/Natural Resources.** #FA297, Smyth Co. Contact: Steve Umberger, 121 Hutcheson (0437). Review begins Aug. 20.

## NANOSCIENCE

*Continued from 1*

ond). Such devices would allow the development of RF subsystems that could bestow a substantial size reduction of wireless devices down to wristwatch dimensions."

While at Cornell University, Evoy was involved in the nanomachining of structures with dimensions as small as 30 nm, and mechanical-resonance frequencies in the hundreds of megahertz.

"However, issues ranging from materials science to industrial amenability hinder the further deployment of nanoelectromechanical systems (NEMS)," he said. "For instance, energy dissipation is highly problematic at such dimensions. Furthermore, nanomechanical systems demand a drastic revision of design approaches." Evoy and the Virginia Tech NEMSLAB are addressing such issues, and are confident about the eventual deployment of nanomechanical structures in consumer applications.

Di Ventra's research is enlarging the fundamental understanding of the transport properties of molecular devices—in particular, how current flow can change the structure of molecular devices and how current fluctuations (shot noise) can affect the development of this scale of electronics.

Computing has reached a technological and physical limit in the number of transistors that can be integrated into a single chip. A new generation of nano-scale electronic devices that can perform functions identical or analogous to those of the transistor and other key components of microcircuits, and which can outperform the integration level of today's chips at a manufacturing cost comparable to the present technol-

ogy, is needed. Researchers in the new field of molecular electronics aim to create immensely powerful computing circuits based on trillions of individual building blocks, each no larger than a single molecule. However, a more fundamental understanding of the transport properties of molecular structures at the atomic level is required.

Di Ventra is providing theoretical background for the development of molecular devices by means of accurate first-principles calculations of their transport properties: specifically, current-induced forces (electromigration) and statistical effects (quantum-shot noise). Di Ventra discovered that the contact region between molecules and electrodes—in particular, its geometry and chemistry—plays a crucial role in the transport properties of molecular devices. These findings have redirected attention from the initial emphasis on the electronic properties of isolated molecules to the formation and char-

acterization of their contacts with bulk electrodes. Now, Di Ventra seeks a more fundamental understanding of this relationship that can eventually lead to the "design" of molecule-lead contacts with reduced electromigration effects, he said.

He will also address prediction of the voltages at which specific molecular devices fail to operate, the role of electrical contacts in generating high resistance and their role in generating quantum-shot noise, and the operating mechanisms of molecular field-effect transistors. His research will span both fundamental aspects related to the transport properties in nanoscale structures, and engineering issues related to the feasibility and functionality of actual molecular devices.

His work in molecular electronics has been featured twice in *Nature* and in other national journals. He has filed a patent on power-electronics applications.

of 17 new companies and 116 new jobs in Virginia.

A subsidiary of the Virginia Tech Foundation, the center is based in the Pamplin College of Business and sponsored by the Center for Innovative Technology, several Virginia Tech offices, the towns of Blacksburg and Christiansburg, and the Montgomery County Industrial Development Authority.

Politis succeeds Herb Cork, who retired in June.

For more information about BTC, call 1-2730, e-mail [btc@vt.edu](mailto:btc@vt.edu), or visit its web site, [www.cob.vt.edu/btc](http://www.cob.vt.edu/btc).

## POLITIS

*Continued from 1*

In many cases, the center offers partial funding assistance with these services, which cover a broad range of needs, including strategic planning, marketing research, legal support, personnel development and administration, capital and financial resources development, accounting and fiscal planning, and quality management.

During the 2000-01 fiscal year, the center provided assistance on 260 projects to 108 organizations. Its services contributed to the creation



VIRGINIA POLYTECHNIC INSTITUTE  
AND STATE UNIVERSITY

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## McLean named director for aquaculture research

By Lynn Davis

Ewen McLean has been named professor and director of Virginia Tech's Aquaculture Center, effective September 1. McLean will develop teaching, outreach, and research programs collaboratively with faculty members associated with the Commercial Fish and Shellfish Technologies (CFAST) program at Virginia Tech.

CFAST exists to generate and share knowledge about the effective production, marketing, physical distribution, and use of safe and wholesome fish and shellfish and their products, and to foster continuous profit, growth, and development of the industry.

"Virginia Tech's Aquaculture program is nationally recognized for innovations in intensive recirculating aquaculture systems and we are pleased to welcome Dr. McLean and his unique blend of expertise," said Donald J. Orth, head of the Department of Fisheries and Wildlife Sciences.

Aquaculture recirculation systems have been highlighted internationally as a means of protecting both the environment and inventory of live animals. Virginia Tech maintains facilities at three sites: a research and Extension facility for aquaculture at Hampton for seafood products and marine aquaculture; an on-campus facility for research-scale-intensive recirculating aquaculture, reproduction, and breeding; and at Saltville for demonstration of cir-

culating aquaculture technologies to yellow perch production.

McLean has a record of teaching, research, and administrative accomplishments and expertise in endocrinology, physiology, and aquaculture-product quality. His research on transport of biologically active peptides and proteins across fish epithelia, has been widely cited and has numerous applications to aquaculture and drug delivery for fish pharmaceuticals.

He has published nearly 70 journal articles and book chapters in addition to many secondary communications. McLean currently serves as editor for the journals, *Aquaculture* (in area of husbandry and management) and *Aquaculture Nutrition*.

McLean has held positions previously as director of the Laboratory for Aquatic Biotechnology at the University of Aalborg in Denmark and postdoctoral research fellow in the aquaculture and biotechnology sections of Canada's Department of Fisheries and Oceans. He is currently head of the Department of Marine Science and Fisheries at Sultan Qaboos University in the Sultanate of Oman. He completed a Ph.D. in fish physiology at the University of Bradford, an M.S. in applied fish biology from University of Plymouth, and a B.S. in fish science from the University of East London.

Mason University, Trauger has taught ecosystem management, conservation ecology, and endangered-species policy and management. During the last five years, he has been senior staff biologist for the Biological Resources Division of the U.S. Geological Survey.

Virginia Tech announced plans in early March to reassess and re-focus its Northern Virginia programs in terms of their relevance to four core interdisciplinary research areas: development and applications of information technology, urbanization and built environments, policy and governance, and education and leadership. The College of Natural Resources' program cross all four areas.

lettuce and other crops. His hope, he said, is that the discoveries from his research will one day improve the nutrition of people in developing countries.

Nessler said research has provided evidence that vitamin C and other antioxidants also help prevent symptoms of aging related to dementia.

"This kind of technology is extremely good for both mankind and the planet," Nessler said. "With the precision of the scalpel, we can breed very specific traits into plants.

## Richardson to head sponsored programs

By Susan Trulove

David W. Richardson has been named director of the Office of Sponsored Programs, according to Vice Provost for Research Leonard K. Peters.

"David has been acting director since January, and brings a lot of energy and insight to the position," Peters said. "We will also benefit from his experience in sponsored programs at the University of Georgia."

Richardson worked for the UGA Office of Sponsored program beginning in 1992, first as a grants coordinator, then a grants officer, serving the College of Agriculture, School of Forestry, College of Pharmacy, College of Arts and Sciences, School of Environmental Design, College of Education, Georgia Museum of Art, College of Business, and College of Veterinary Medicine.

He became business manager for the Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program in 1996, where he provided financial man-

agement and administrative support for a multi-million dollar research, training, and exchange program funded by the U.S. Agency for International Development.

He has been at Virginia Tech since the fall of 1998, when he joined the university as director of revenue sharing in Research and Graduate Studies. A year later, he became administrative information assistant, and developed instruments and mechanisms to help identify indicators of program quality.

Richardson earned his undergraduate degree from Oklahoma State University in agricultural economics and his master's degree from the University of Missouri, Columbia, in family and consumer economics. He was a U.S. Senate intern in 1987 and a Missouri House of Representatives Graduate Research intern in 1990. Richardson was statistics analyst for Missouri Supreme Court until he joined UGA sponsored programs.

He is active with the Academy for Leadership Excellence at Virginia Tech.

## OFF-CAMPUS

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management, weed management, and tests of new varieties of plant cultivars.

The AREC's serve not only as key field-research sites, but also as field laboratories for undergraduate and graduate students and field-day program sites for school groups and the general public.

"Field days are the essence of the land-grant university system," said Kriton Hatzios, director of Virginia Agricultural Experiment Station. "Through the research at our AREC's, we help fulfill the university's mission of focus on teaching and learning, research, and outreach."

Field days showcase current research and offer opportunities for first-hand observation of projects as well as discussion with the researchers. Most of these events feature guided tours, usually by hay wagon, through the fields and forests, with stops at selected sites for presentations by researchers working on various projects.

At the annual third-grade agriculture day at the Northern Piedmont AREC in Orange, students learned how to "grow" a pizza, as they examined the ingredients from seed to plant to final product. They also had the chance to see farm animals up close and personal, learn about farm safety, create an art project from seeds, and learn about many other aspects of agriculture and farm life.

An early spring Field Day at the Shenandoah Valley AREC in Steeles Tavern showcased the center's new cattle-manage-

ment system. State-of-the-art facilities are combined with experimental grazing systems to allow researchers to determine the best forage combinations for cows and calves.

At recent field days at the Eastern Shore AREC in Painter, local vegetable producers focused on ways to combine the newest production techniques with the lowest effective amount of recommended fertilizers, herbicides, and insecticides to produce high-quality, abundant crops. Corn, potatoes, soybeans, cotton, tomatoes, cucumbers, strawberries, and grasses for forage were among the commodities highlighted. Crop-protection product specialists came to see for themselves how well their products worked in the field, and to hear the researchers' reports on competitors' products, as well.

A late June vegetable field day at the Tidewater AREC in Suffolk attracted home gardeners as well as commercial producers. One participant, who raises vegetables that he gives to area food banks, said he came to the event to learn ways to make his five-acre vegetable garden more productive. The program focused on early-maturity silver corn varieties as well as on production of melons and butterbeans.

The colleges of Agriculture and Life Sciences, Natural Resources, Human Resources and Education, and Veterinary Medicine at Virginia Tech, which collectively compose Virginia Tech's Agency 229, Division of Virginia Cooperative Extension and Agricultural Experiment Station, are involved in AREC programs. Strong, productive linkages with faculty members at Virginia State University and other neighboring institutions further strengthen and broaden the research base.

More than 40 faculty and 80 staff members serve in full-time, hard-funded positions. In addition to allocated operating dollars, competitive grants and contracts generated by the faculty support operations and soft-funded personnel, including graduate students and post-doctoral associates.

Additionally, personnel at all AREC's work closely with local Extension agents to assure relevancy of programs and delivery of information through strong outreach programs.

## TRAUGER

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able natural resources in a rapidly urbanizing environment. The outreach component of the program will include short courses, workshops, and seminars on urban-wildlife management, urban forestry, and geographic-information-system applications to urban land management and planning.

Trauger has been a research scientist in waterfowl ecology and has a variety of administrative experiences throughout a federal career spanning more than 30 years. He previously held posts as chief of wildlife research for the U.S. Fish and Wildlife Service and director of the Patuxent Wildlife Research Center. As an adjunct professor at Virginia Tech and George

## RAT

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of vitamin C in lettuce, the product would have longer shelf life. It also might help keep salad-bar lettuce fresh—which would be welcomed by the restaurant industry. Vitamin C is a natural product, in contrast to biosulfites, which the FDA banned from use on raw foods because one out of 100 people has an allergic reaction to them.

Nessler said the timing of his experiment was fortunate. Shortly after he and his colleagues had successfully introduced the gene into lettuce, another scientist's paper said plant and animal biochemical pathways differed so much that animal genes could not work in plants. So, theoretically, he said, the experiment shouldn't have worked—and if he had read and believed the conclusions of that article, he might never have attempted it.

Nessler theorized that plants may have both plant and animal pathways, or that there may be a stronger connection between the pathways than previous research has shown.

Although Nessler does not think that lettuce enriched in vitamin C through rat genes will ever be commercially available, he does hope that his research will result in more acceptable ways to turn on latent vitamin production in

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