

# SPECTRUM

Virginia  
Tech

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

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**TODAY'S EDITION**

See page 2 for  
information on  
campus activities.

## University, WFU to form biomedical-engineering school

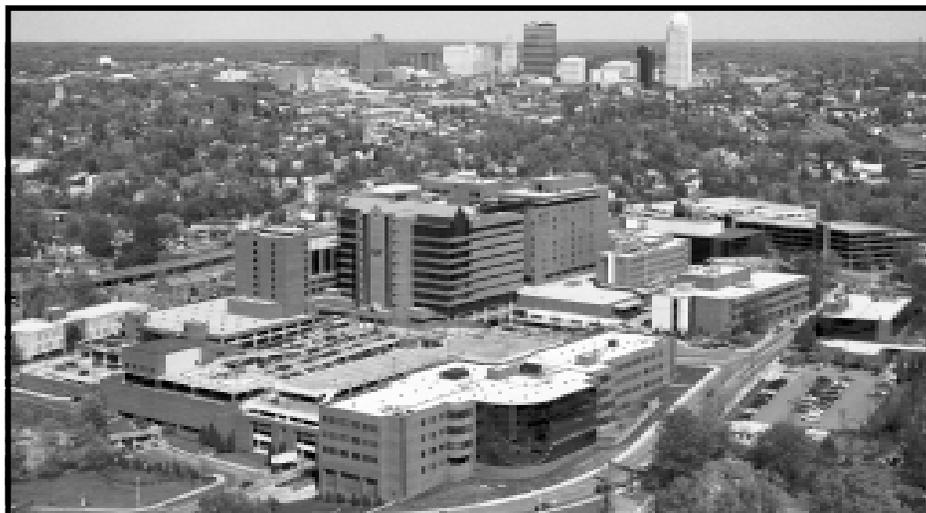
By Larry Hincker

Wake Forest University and Virginia Tech announced plans Tuesday to establish a joint school of biomedical engineering and science. The Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences will be operated jointly at each school's campus.

"This is a natural partnership between Virginia Tech, with no human medical school and Wake Forest, with no engineering school. We are extremely excited about affiliating with a highly respected university like Wake Forest," President Charles W. Steger said.

"Improvements in human health are increasingly the result of cooperative advancements in medicine, science, and engineering. We offer to each other access to leaders in their respective fields," said C. Douglas Maynard, interim dean of the Wake Forest School of Medicine.

Operationally, the school will be run jointly by Tech's College of Engineering, the Virginia Maryland College of Veterinary Medicine, and the Wake Forest University School of Medicine.



Aerial view of the medical school at Wake Forest University in Winston-Salem, North Carolina.

(Courtesy WFU)

The joint plan for the schools will be to offer the M.S. and Ph.D. degrees in biomedical engineering (BME) and to be the focus of collaborative research. Elaine Scott, director of the Virginia Tech's Center for Biomedical Engineering and author of the original proposal, said "We expect about 80 students within about

five years. Tech currently has 30 students in the BME graduate option and Wake has seven, so a total enrollment of about 80 students is quite achievable."

Scott sees joint instructional and research programs initially focusing on a) biomechanics,

(See UNIVERSITY on 3)

## Board okays medical-college collaboration

By Larry Hincker

The Board of Visitors Executive Committee has approved a "collaboration agreement" between the university and the proposed Edward Via Virginia College of Osteopathic Medicine. The agreement spells out responsibilities of each school and sets the stage for further negotiations.

"These are the first concrete steps necessary to helping make the Via College of Osteopathic Medicine a reality," said James Bohland, senior fellow for biomedical, bio-engineering, and health projects. Bohland is responsible for negotiating the university's part in the new school.

Commenting on the strategic nature of this partnership, President Charles Steger said, "This is in concert with new directions for the university. Our affiliation with Carilion on biomedicine, our new bio-informatics institute, the collaboration with the Via Osteopathic College, and the partnership with Wake Forest on biomedical engineering, all steer us in the direction of research in human health."

In August, the Harvey W. Peters Foundation announced plans to establish the new medical college in Blacksburg. It has filed papers, hired a dean, and ultimately plans to enroll its first class of students in the fall of 2003.

The collaborative agreement allows for the contractual use of university facilities and offices by the medical college. Actual services and costs are yet to be negotiated, but it is envisioned that the new school might draw upon typical academic support and student services such as those of the Office of Sponsored Programs, Institutional Review Board, Printing Services, Parking and Transportation, and Physical Plant, Library, Health Services, and Food Services.

It is also expected that the medical college would contract for the use of certain university facilities for teaching and research. It intends to hire selected faculty members from Virginia Tech under a contract-reimbursement basis to teach some courses. The medical college also will have its own full-time faculty but those who perform research will have joint appointments at both schools.

According to John Rocovich, chair of the Harvey Peters Foundation, the medical college plans to locate in the Virginia Tech Corporate Research Center near the Ramble Road entrance. It will begin building its first building in 2002 and will be ready for the first incoming class in fall 2003.

Mark McNamee, university provost, likes the dual teaching and research mission of the new partner. "We see opportunities for collaborative medical research between their faculty and ours. We have strengths in

(See BOARD on 3)

## Gilmore releases funds for chemistry/physics building

By Larry Hincker

Governor James Gilmore last week released the balance of funds that will allow the university to begin work on its new chemistry/physics facility.

"The Virginia Tech community is deeply appreciative of Governor Gilmore's release of funds to continue with the construction of our badly needed chemistry/physics facility," President Charles Steger said. "The release of \$17.2 million for this project will

enable it to go to bid, create jobs in the New River Valley, and build a facility where many thousands of students will be trained for the future. We are grateful for the governor's leadership in this matter. Virginia Tech will ensure that these funds are spent wisely and productively for Virginia," Steger said.

The \$27.2-million, 85,000-gross-square-foot building would be located adjacent to Hahn Hall along West Campus Drive. It will be comprised mostly of instructional labs for chemistry

and physics and two large auditoriums, as well as several research labs. University planners hope to have the bid process under way within days and have the building under construction before the end of the year.

The project had been in limbo since Gilmore froze all capital-construction projects throughout the state earlier this year because of a state funding shortfall. The new building will replace Davidson Hall, constructed in 1928.

## New chief institutes community policing program

By Tatiana Aras and Ashley Chapman,  
University Relations interns

Virginia Tech Police Chief Debra Duncan has only been on the job for a few months, but armed with a new vision and philosophy she is already implementing substantial changes in the focus and the mission of the department.

Duncan began by bringing together a committee of police officers to re-write the department's mission statement. The new mission statement, unlike the old, focuses on community and problem-oriented policing. "We want more than just the facts, we want to interact with the community," Duncan said.

A new program has been created to foster this theme of community policing. The Adopt-A-Hall program puts police officers in touch with students by placing officers in residence halls. This initiative was established primarily to correct the pre-conceived notion that police officers only react to a given situation instead of being proac-

tive within the campus and surrounding community. The new focus will hopefully establish a positive relationship between residence hall students, staff members and campus police officers to increase awareness of their surroundings and in turn, reduce crime.

"It is an excellent idea because it allows our students to see police beyond times of crisis, in a friendly and supportive environment," Director of Residence Education Gerry Kowalski said.

Kowalski said the program has received unanimous support from the Residence Hall Education staff.

A Community Outreach Division has been created to expand officer training in community policing and to inform them of their new duties and departmental expectations.

In addition, three new VTPD satellite offices will be opened in War Memorial Hall, Squires Student Center, with a mobile unit to be located in strategic places around campus. Plans to increase campus-wide community policing

(See NEW CHIEF on 4)

## VTPD Background and Update

(Editor's note: A brief history of the Virginia Tech Police Department illustrates how the department began and has grown and changed over the past half-century. Personnel developments reflect newly evolving roles.)

In 1945, three part-time university employees formed the Virginia Polytechnic Institute Police Department.

By 1959, three additional positions were added to the department, increasing the number of employees to six. Because there were no portable radios, calls were dispatched by a red light on top of Burruss Hall. Officers, while conducting building checks, would look to Burruss Hall to determine if they were needed elsewhere

(See VTPD on 4)

# ACTIVITIES

## EVENTS

### Friday, 19

**Last Day to Resign.**  
**MAA Meeting.** Through 10-20.  
**AIWA Speaker,** 3 p.m., 100 Cowgill.  
**International Club,** details TBA.

### Saturday, 20

**VT Open House.**  
**Campus Clean-up Day,** 2 to 5 p.m., War Memorial Hall.  
**Chamber Music,** 8 p.m., Squires Recital Salon.

### Sunday, 21

**VT Open House.**  
**YMCA Hike,** 1:30 p.m., YMCA Parking Lot.  
**Chamber Music,** 3 p.m., Squires Recital Salon.

### Monday, 22

**Faculty Development Workshop,** 10 a.m. to noon, 1120 Torgersen.  
**Family, Work/Life Resources Program,** noon to 1 p.m., DBHCC room G.  
**Faculty Development Workshop,** 3 to 5 p.m., 1120 Torgersen.

### Tuesday, 23

**Faculty Development Workshop,** 10 a.m. to noon, 1120 Torgersen.  
**CITICYF Grand Opening,** 11 a.m., Wallace atrium.  
**Faculty Development Workshop,** 3 to 5 p.m., 1120 Torgersen.

### Wednesday, 24

**YMCA Open University Registration,** 9 a.m. to 6 p.m., YMCA Office.  
**Faculty Development Workshop,** 10 a.m. to noon, 3060 Torgersen.  
**Faculty Development Workshop,** 12:30 to 1:30 p.m., location TBA.  
**Faculty Development Workshop,** 1:30 to 3 p.m., 3060 Torgersen.  
**Faculty Development Workshop,** 3 to 5 p.m., 3060 Torgersen.  
**CEUT Program,** 4:15 to 6 p.m., Hillcrest large conference room.  
**"With Good Reason,"** 7 p.m., WVTF.  
**VT in Spain Information Meeting,** 7 p.m., 327 Major Williams.

### Thursday, 25

**YMCA Open University Registration,** 9 a.m. to 6 p.m., YMCA Office.  
**Faculty Development Workshop,** 10 a.m. to noon, 1140 Torgersen.  
**YMCA Slide Show,** noon, Cranwell Center.  
**CEUT Program,** 3 to 5 p.m., DBHCC.  
**Faculty Development Workshop,** 3 to 5 p.m., 3060 Torgersen.

### Friday, 26

**YMCA Open University Registration,** 9 a.m. to 6 p.m., YMCA Office.  
**International Club,** details TBA.

**New River Valley Symphony,** 8 p.m., Burruss auditorium.

## SEMINARS

### Friday, 19

**Highlands in Chemistry,** 11:15 a.m., 3 Davidson: Eric Toone, Duke.  
**MCBB,** 12:30 p.m., 102 Fralin: Marvin Cassman, NIGMS.  
**VIA—CEE,** 2:30 p.m., 100 Hancock: Glen Daigger, CH2M Hill.

### Monday, 22

**Biochemistry,** 4 p.m., 223 Engel: Andrej Sali, Rockefeller.

### Wednesday, 24

**Human Development,** noon, Wallace atrium: Joyce Arditti.  
**ESM,** 4 to 5 p.m., 110 Randolph: Takaru Igusa, Johns Hopkins.

### Thursday, 25

**Geological Sciences,** 4 p.m., 4069 Derring: Shelley Kenner, Kentucky.

### Friday, 26

**Highlands in Chemistry,** 11:15 a.m., 3 Davidson: Hyuk Yu, Wisconsin-Madison.  
**MCBB,** 12:30 p.m., 102 Fralin: Jim Maller, Colorado.

## BULLETINS

### IAWA advisor to lecture

Brinda Somaya, Indian architect and International Archive of Women in Architecture (IAWA) advisor will speak on village earthquake rehabilitation, urban architectural issues in

India, and architecture by Indian women architects today at 3 p.m. in 100 Cowgill.

### Seminar on evaluation of instruction offered

The Office of the Provost, CEUT, CIL, and IDDL will

present a seminar, "The Evaluation of Instruction," today from 8:30 a.m. to noon in 150 Squires. Margaret Miller, president emerita, AAHE will present the invited address, "The Scholarship of Teaching and Learning."

## Information-technology center holds grand opening

By Jean Elliott

The Center for Information Technology Impacts on Children, Youth, and Families (CITICYF) will celebrate its grand opening on Tuesday, Oct. 23, at 11 a.m. in the Wallace atrium.

Peggy S. Meszaros, director of the center, plans to use the opening as an opportunity to hear reports on the first research mini-grants awarded to faculty members. The CITICYF, which was established on Nov. 1, 2000, will also recognize founding center affiliates.

The focus of CITICYF is to examine how continued growth in technology affects children, youth, and families. Through research and

outreach, the center provides critical insights and data on issues of concern to families, educators, policymakers, and business and agency leaders.

The center's initial research explored the appropriate use of technology in home and academic settings. Lynn Hill, an assistant professor in human development, along with Kelly Wells and Angela Primavera, studied the use of technology in Virginia Tech's Child Development Lab School. They found that many children in the four-to-five year old age range already had extensive knowledge of the computer. Many were already capable of using

word-processing programs to write simple letters. Others were skilled with drawing programs, scanners, and printers. A few of the children understood many of the intricacies of searching the World Wide Web for information. Three-year olds were intrigued with computers and scanners, but not as proficient. While their work was exploratory in nature, they were quick learners.

Kathleen Carico, assistant professor in teaching and learning, examined how the discussion of literature is affected when K-12 teachers in two counties use a multi-school electronic-discourse community.

Rosemary Goss and Julia Beamish, both faculty members in the Department of Near Environments, surveyed developers of multi-family housing to see what technology was included and how residents used it.

The other mini-grant was used to assess what skills consumers need to use information technology to learn about food and nutrition, and how Extension specialists use technology for teaching. Interdepartmental team members were Ann Hertzler and Denise Brochetti (human nutrition, foods, and exercise), Daisy Stewart and Greg Sherman (teaching and learning), and Nancy Templeman (Extension).

## Increased enrollment seen at GTA Workshop

By Julie Kane

A total of 387 students, 21 more than last year, attended the eleventh annual Graduate School's GTA (graduate teaching assistant) Workshop. Of that number, 351 (compared to 329 last fall) completed the program to receive one credit for the Grad 5004 course.

"The GTA workshop provides a valuable service to the university," said Joseph Merola, acting dean of the Graduate School. "As the bar of excellence continues to rise for students at Virginia Tech, there will be increased pressure on GTA's to hone their teaching skills and demand the best from their students. We deeply appreciate the efforts of those volunteers who make these workshops possible."

According to Don McKeon, director of ESL/GTA training, "There has been a fairly steady increase in the number of GTA's attending the workshop over the years." Because the

growing program has outgrown its space in 100 Hancock, McKeon said alternate sites are being considered.

"Since the mid-nineties the number of students has grown from the high two hundreds to the high three hundreds. We expect to reach 400 next year," McKeon said.

Subjects presented during the three-day workshop included oral presentations, interactive learning, lecture preparation, grading techniques, teaching labs, digital imaging, the latest developments in information technology, writing across the curriculum, university policies for students, course design, time management, and students with disabilities.

"It is especially important for GTA's to know the support systems at Virginia Tech," McKeon said. "They need to be observant and supportive of those students who have learning

disabilities or have special needs. People learn differently. The GTA needs to be aware of different learning styles."

McKeon said GTA's have a special advantage reaching students because they are students themselves. On the other hand, GTA's must maintain a professional teacher/student relationship.

Students' comments were generally positive. Most said they did not know what to expect, but learned a lot, especially from tips and advice given by professors and experienced GTA's. One student said, "The program covered a wide variety of topics and gave many resources for improving teaching skills, as well as ways to complete thesis work."

The GTA Program originated as part of Graduate Studies' Training of the Future Professional program, involving both GTA training and research-career preparations.

# EMPLOYMENT

## CLASSIFIED POSITIONS

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

### FULL TIME

**Alternative Transportation Manager**, 007223F, PB 4, Office of Transportation.

**Executive Secretary**, 001322G, PB 3, University Libraries/Dean's Office.

**Faculty Data/Procedure Technician**, 006286G, PB 3, Personnel Services.

**Federal Reimbursement Unit Analyst**, 007847B, PB 5, IPO.

**Federal Reimbursement Unit Lead Analyst**, 007848B, PB 5, IPO.

**Financial Aid Area Coordinator**, 001519S, PB 5, AIS.

**Financial Planning Manager**, 007567F, PB 5, BFP.

**Grants/Contracts Fiscal Technician**, 007765J, PB 3, CHRE.

**Housekeeping—Night Crew**, 007814H, PB 1, RDP.

**Housekeeping Manager**, 006926H, PB 3, RDP.

**Housekeeping Supervisor**, 000269H, PB 2, RDP.

**Housekeeping Worker**, P002005C, PB 1, Physical Plant.

**Information Systems Administrator/Maintainer**, 007849B, PB 5, STL/ISE.

**Laboratory Specialist**, 007707B, PB 3, CE.

**Laboratory Specialist**, 007860M, PB 3, CVM—BSP.

**Multimedia Systems/Applications Specialist**, 002054A, PB 4, VB/Services.

**Payroll Manager**, 002501F, PB 5, Controller's Office.

**Plumber Steamfitter**, 007339F, PB 3, Physical Plant.

**Secretary Senior**, 002403M, PB 2, CSES.  
**Sous Chef**, 000940H, PB 3, RDP.  
**Transportation Planner**, 007498F, PB 4, Office of Transportation.

### PART TIME

**Animal Care Technician**, W020066M, PB 2, VTH.  
**Animal Care Technician/Small Animal**, W022675M, PB 1, VTH.

**Customer Service Representative**, W023097F, PB 2, Bursar's Office.

**One part-time food-service position available.**

**Graduation Analyst**, W022980G, PB 2, Registrar.

**ICU Veterinary Technologist**, W022218M, PB 2, VTH.

**Laboratory Specialist**, W023305M, PB 3, APS.

**Museum Administrative/Program Specialist**, 007242G, PB 2, MNH.

**Office Assistant**, W022996M, PB 2, CVM.

**Office Services Assistant**, W022114F, PB 2, RMS.

**Office Services Specialist**, W020397J, PB 3, SHC.

**Radiologic Technologist**, W022238J, PB 3, SHC.

### UNIVERSITY ONLY

**Personnel Assistant**, UU007862M, PB 3, CALS—Extension.

### OFF CAMPUS

**Geographic Programs Specialist**, 007845M, PB 4, BSE.

**Radio Announcer**, W020800S, PB 3, UR/WVTF Radio

## FACULTY POSITIONS

### INSTRUCTIONAL

**Architecture. Assistant Professor.** Contact: Frank Weiner, 201 Cowgill (0205). Review begins Jan. 15.

**Wood Science/Forest Products. Extension Specialist.** Contact: Robert Smith, 210 Cheatham (0323). Review begins Feb. 1.

### NON-INSTRUCTIONAL

**Training/Technical Assistance Center—College of Human Resources/Education. Severe Disabilities Technology Coordinator.** Contact: Dianne Yardley, 101 War Memorial (0317).

Deadline: June 15 or until filled.

**Agriculture/Extension Education. Project Associate, Virginia FFA Association.** Contact: John Hillison, 268 Litton Reaves (0343). Deadline: Nov. 15 or until filled.

**Virginia Tech Institute for Municipal Research. Project Director.** Contact: Joe Rees, 104 Draper Rd. (0520). Review begins immediately.

**Center for Power Electronics Systems. Program Development Associate.** Contact: Ann Craig, 667 Whittemore (0111). Review begins immediately.

**Virginia Cooperative Extension. Extension Agent, Family/Consumer Sciences. #FA628,** Surry Co. Contact: Eleanor Schlenker, 121 Hutcheson (0437). Review begins Nov. 8.

**Agricultural/Applied Economics. Research Associate, Biotechnology Assessment.** Contact: George Norton, 208-B Hutcheson (0401). Deadline: Nov. 1 or until filled.

**Dean of Students Office. Coordinator of Orientation.** Contact: Debbie Falls, 152 Henderson (0255). Review begins Oct. 29.

## FORUM

### Black Caucus Commends University's Diversity Efforts

As another academic year is under way, the Black Caucus of Virginia Tech would like to commend President Charles Steger and the administration for establishing a university-wide agenda that recognizes the significance of and need for diversity. Likewise, the Black Caucus would like to acknowledge the numerous efforts throughout the university that have contributed to the goal of diversity. A diverse campus enhances the educational experiences of the students at Virginia Tech by exposing individuals to myriad cultures, opinions, lifestyles, religions and opposing schools of intellectual thought. The free exchange of diverse intellectual thought, ideas and scholarship is the hallmark of a great university.

The Black Caucus is very encouraged by the positive steps the university has taken to enhance the educational experiences and opportunities for the campus community. The efforts initiated by the current administration and other units across the campus demonstrate a genuine commitment by Virginia Tech to expanding its excellent educational opportunities to citizens throughout Virginia and beyond, thus positioning the university to better fulfill its mission as a land-grant institution.

Many of the diversity initiatives implemented by the current administration have al-

ready begun to yield positive results. For example, this year's freshman class at Virginia Tech is the most diverse group of students ever to be admitted to the university. Reports indicate that approximately 22 percent of the freshman class are minority-group members as compared to 19 percent last year. This year's class includes more African-Americans, Asians, and Latinos than ever before, while noting no reduction among American Indian students. Achieving this goal has been no small task, as it requires collaboration and support across the university. More critically, it requires vision, a well-articulated message, a plan of action and a sustained commitment to achieving the objective.

The Black Caucus encourages Virginia Tech to continue its commitment to diversity as it recognizes that diversity is a university-wide effort. No single office on campus or individual in an office is responsible for single-handedly creating diversity at Virginia Tech. Like many other successful endeavors at Virginia Tech, diversity is a team effort.

As the Black Caucus continues to look for and recognize the sustained commitment to diversity by Virginia Tech, it also stands ready to assist, collaborate with and support university efforts seeking to improve educational opportunities through diversity. The Black

Caucus will continue to propose suggestions that it believes will augment and advance current university diversity initiatives. Three significant suggestions include the implementation of the College of Arts and Sciences' hiring model across all levels and departments at the university; the implementation of a capital campaign intended to raise funds to address the immediate and long-term scholarship, teaching, research and professional development needs of minority programs, faculty, staff and students at Virginia Tech; and, the implementation of sensitivity training for local law-enforcement officials and expansion of current programs as they pertain to race relations.

The Black Caucus commends the university and looks forward to working diligently to help Virginia Tech fulfill its mission and achieve its visionary goals.

*The Black Caucus of Virginia Tech was established formally in 1981 under the leadership of the late Overton R. Johnson. As an organization, the Black Caucus supports the university's mission and serves as a support network for African American faculty and staff members and students. Ronald Giddings is the current president.*

## UNIVERSITY

*Continued from 1*

b) tissue and cell engineering, and c) bio-imaging and signal analysis. "We are particularly enthused about the potential for sponsored research opportunities. Wake will take the lead in bio-imaging and signal processing, while Tech will lead in the biomechanics and tissue and cell engineering areas," Scott said. "We expect that other focus areas, such as bio-informatics, will be added in the near future."

Jim Bohland, senior fellow for biomedical, bio-engineering, and health projects added, "This arrangement is ideal because we not only have complimentary programs but also complimentary scientific equipment and laboratories. Research equipment is so very costly and this partnership enables great economies of scale. Wake Forest has some of the latest image technologies, for example, a research MRI and micro-PET scanner that Virginia Tech could not afford to purchase. To have those technologies available to our biomedical research will greatly enhance our competitiveness in securing biomedical research funds."

Virginia Tech has numerous bio-engineering research laboratories focused on

biomechanics and on materials characterization and development with a vast array of laboratory equipment and engineering expertise to carry out the appropriate experiments and analyze the results.

The new school will be run by a council consisting of faculty members and administrators from each university. Initially, the director will be at Virginia Tech and the associate director will be at Wake Forest.

The universities have signed a memorandum of understanding, enabling university leadership to move forward and articulate an agreement between the two universities. Ultimately, the school will require approval of Tech's University Council and the State Council of Higher Education for Virginia.

Initially, each university will support the school with existing faculty members, but plans are to add new faculty members as additional funding is acquired. Currently, there are over 20 faculty members participating in the Center for Biomedical Engineering at Virginia Tech. Earlier this year, Tech and Wake Forest jointly applied for a \$1-million planning grant from the Whitaker Foundation to provide graduate fellowships to strengthen initial recruiting efforts and to enhance

distance-learning capabilities. The Whitaker Foundation specializes in funding the formation of bio-engineering schools. Its stated goal is to ensure that every major engineering college has a strong bio-engineering component.

## BOARD

*Continued from 1*

biotechnology applications, bio-informatics, and biomedical engineering," McNamee said.

The new college plans to place physicians in rural areas. Bohland said, "With its emphasis on rural primary care, the osteopathic college's mission is consistent with the Virginia Tech land-grant mission to help serve citizens of the state. There is a good philosophical basis for cooperation beyond the obvious benefits for research."

Longer-range plans involve Virginia Tech's assistance in establishing a telecommunications infrastructure for development of telemedicine in rural areas.

The university also announced today the beginning of efforts to form a jointly run school of biomedical engineering between Virginia Tech and Wake Forest University.



VIRGINIA POLYTECHNIC INSTITUTE  
AND STATE UNIVERSITY

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## Sandy research staff moving to Collegiate Square

By Susan Trulove

By the end of 2001, staff members of the Office of Sponsored Programs (OSP) who are now located in Sandy Hall will be relocated to Collegiate Square.

The Sandy Hall OSP team processes proposals and budgets and provides grant and contract oversight for researchers in the colleges of Human Resources and Education, Natural Resources, Veterinary Medicine, and Agriculture and Life Sciences, as well as the Virginia Bioinformatics Institute. Being located in Sandy Hall has been convenient, said David Richardson, director of sponsored programs. But the Graduate School now requires that space for programs to serve students.

The Research Division is also exploring its

services. "We are re-examining the entire OSP operations to determine how we can best serve Virginia Tech faculty and staff members," Richardson said. "We will remain true to our mission to provide the best service possible to the Virginia Tech faculty and staff in the pursuit and administration of external funding."

One plan for addressing the loss of proximity is to provide electronic signatures for the proposal approval form, or yellow sheet. "A faculty member will not have to walk a piece of paper around for two days to get signatures," Richardson said. "We are also working hard to revise the form so it will also capture additional information. For instance, we want to give credit to co-principal investigators."

The new proposal-review form is scheduled to be introduced as a pilot project with one or two departments after the first of the year. "We have been talking to deans and will talk to the department heads in the four colleges," Richardson said.

Another strategy to ease the loss of proximity may be for the OSP staff to have weekly office hours within each college, if work stations with Banner access can be arranged in each college. "I want proximity to be a non-issue," Richardson said.

"The aim is to maintain our service and place our office in a position to respond to the university's drive to become a top-30-ranked university."

## Trivedi produces instructional CD's

By Sally Harris

Ketan Trivedi, an instructor in the chemistry department and founder of the company T<sup>2</sup>I, combined his chemistry background with a long-term interest in video and other technologies to create a set of three CD's to teach students how to use scientific calculators.

Trivedi Technology Innovations International (T<sup>2</sup>I) is a company that Trivedi started to develop educational programs on CD-Rom and DVD featuring audio, video, interactivity, simplicity, and "a fascinating educational experience," Trivedi said. The company's first interactive software product, "Mathematical Operations Using a Scientific Calculator," teaches students how to use the TI-83/TI-83 Plus calculator for mathematical operations.

"In my experience of teaching for 10 years, I'd say more than 30 percent of the students were lacking in an understanding of math concepts and using scientific calculators," Trivedi said. "That led to frustration in the subject matter, and then they were embarrassed to ask how to use the calculator. I wanted to do something to help them in one form or another."

Meantime, Trivedi had indulged his interest in videotaping as a graduate student at Ann Arbor, where he learned such techniques as editing and dubbing. When he later, as a teacher, saw the students' dilemma with the scientific calculator, he decided to bring his two interests together.

By 1995, he began developing "Mathematical Operations Using a Scientific Calculator." After talking with Department of Chemistry Chair Larry Taylor this past summer, he decided to finish the CD. He used eight commercial programs, including Director 8. It took eight weeks of 19-hour days to complete the first CD. He produced two other CD's in three months to complete the learning process for high-school students.

The CDs have different topics related to learning to perform mathematical calculations using a calculator, starting with simple concepts and moving to the more complex ones. Each topic is narrated and includes an explanation of the mathematical concepts, examples and worked problems, and videos demonstrating the step-by-step keystrokes needed to perform a calculation on a TI-83 or TI-83 Plus calculator.

One CD deals with statistical analysis, which will be useful in analytical chemistry, Trivedi said, and another deals with matrix algebra, which is applicable to graduate classes in chemistry. The students will have a tutorial to go along with the calculator and can start at the beginning lesson or at their own level and work up.

Trivedi, who teaches in the chemistry department, has a state-of-the-art laboratory in his basement and developed the CD's on his own time, Taylor said. Therefore, the copyright belongs to his company, not to the chemistry department, but the two are working together to produce other educational products.

## Scardina's discoveries may prevent water-borne diseases

By Liz Crumbley

A Virginia Tech engineering graduate student has made drinking-water-treatment discoveries that have earned a grant from a national organization and caught the attention of the treatment industry—and may help prevent outbreaks of water-borne diseases in the future.

Paolo Scardina, a Ph.D. candidate in the Via Department of Civil and Environmental Engineering (CEE), began his research as an undergraduate on the problem of air bubbles in drinking water. Working with Marc Edwards of the CEE faculty, Scardina has continued his research through his master's and into his doctoral program, and he recently won a highly competitive grant worth \$150,000 from the American Water Works Association Research Foundation (AWWARF).

Scardina's research also is being used by engineers with the California Department of Health Services to identify problems at two facilities that have experienced problems with eruptions of air bubbles.

"When you open a can of soda, bubbles form and rise to the surface," Edwards said.

"The same thing can happen in water from lakes and rivers. When air bubbles are released in a 'burp' during the treatment process, pathogens and other particles can escape removal."

The last treatment barrier in most drinking water treatment plants is filtration, Edwards said, and a burp of bubbles can punch holes in filters—tiny holes, but large enough to let particles and pathogens escape into the water that goes out to customers.

"The field of drinking water treatment is about 3,000 years old," Edwards said, "but in all that time, air bubbles in water have not been studied in terms of their ability to affect treatment processes."

Scardina, who began studying air bubbles at Edwards' suggestion during his senior year at Virginia Tech, identified the causes of bubble formation while he was working on his master's. "Before Paolo's findings, we knew that bubbles could cause problems," Edwards said, "but we didn't know how they formed or the range of the impacts."

In addition to studying why bubbles form and how they punch holes in treatment plant

filters, Scardina has made some discoveries. Air bubbles can interfere with the first drinking-water-treatment process—settling—where solid particles from incoming surface water drop to the bottom of treatment tanks. "If bubbles are present at this stage," Scardina said, "pathogens and other particles can attach to them and float on through the treatment plant."

Another important discovery Scardina has made is that bubbles can cause a dilemma for treatment-plant operators at the end of the process. "When bubbles form after water has gone through filtration, water-quality tests may wrongly identify the bubbles as dirt particles or pathogens, even though the bubbles themselves are harmless," Edwards said. "This decreases the validity of and confidence in water quality tests."

While a master's candidate, Scardina published two peer-reviewed papers on his findings and made a presentation at an international water-treatment conference in London. "Paolo's subject area is so new that we had a hard time finding people with enough knowledge of the field to review his papers," Edwards said.

## VTPD

Continued from 1

on campus.

In the early 1960s, two additional positions were added to the department, increasing the number of employees to eight. The police department also employed a dispatcher/clerk and a security guard. In 1967, Ike Nichols was hired as director of security. Nichols, a retiree from the Federal Bureau of Investigation, presided over the change to a security department rather than police. Data were compiled, reports were written and statistics were submitted to the FBI. The majority of officers attended the State Police Academy in Richmond. In 1968, three additional employees were hired, bringing the total of sworn employees to 11.

During the 1970s, the university began significant growth by adding approximately 20 new buildings and student enrollment increased from 5,500 to 15,000. The department also grew, increasing the number of officers to 23 early in the 70s. During 1974-1976, three officers attended the FBI National Academy, and officers were granted permission to carry weapons full time.

During the 80s, the department was changed back to a full-service unit. From 1990 through 1999, the department hired an additional five officers, bringing the total to 28, and moved to its present location in the Sterrett Facilities Complex. The department was granted National Accreditation through the Commission on Accreditation for Law Enforcement Agencies, Inc. This accomplishment allowed

the department to receive national recognition as a full-service, professional police department. Seven positions were allocated to the department during this decade for a total of 35 sworn officers.

In July 2001, Debra C. Duncan, formerly a patrol captain from High Point, North Carolina became the chief of police. The department currently has thirty-six sworn officers, eight dispatchers, seven security guards, four support personnel, numerous wage employees and four reserve officers. The department responds to over 20,000 calls for service annually.

In support of the new goals and activities, the following promotions and assignments have been made:

Lieutenant John Brotherton to major/assistant chief; Lieutenant Billy Cardwell to operations captain; Lieutenant David Whitehead to services captain; Lieutenant Jack Ridinger to senior patrol lieutenant; Sergeant Larry Snidow to investigations supervisor; Sergeant Vince Houston to professional standards lieutenant; Sergeant Debbi Morgan to administrative lieutenant; Sergeant Wendell Flinchum to lieutenant/watch commander; Sergeant Joey Albert to lieutenant/watch commander; Sergeant Dickie Graham to patrol sergeant; Sergeant James Ramsey to patrol sergeant; Sergeant Larry Wooddell to patrol sergeant; Officer Phyllis Testerman to community-outreach sergeant; and Officer Bob Baudo to patrol sergeant.

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## NEW CHIEF

Continued from 1

will include police officers in faculty and staff buildings.

"The goals of this program cannot be accomplished by just one person," Duncan said. "It is a collaborative effort with the Virginia Tech Police Department, Residential and Dining Programs, and the students. Also needed is the support of all university faculty and staff members."

Duncan said her entire department is involved in this effort, "We are all key people and we are all going to do community policing. We are here to provide a safe environment for all persons."