Bioinformatics researchers win $600,000 NSF award

By Sally Harris

A multidisciplinary team of bioinformatics researchers from Virginia Tech has won a $600,000 award from the National Science Foundation (NSF) Next Generation Software (NGS) Program.

The award supports the further design and implementation of Expresso—a sophisticated computational system for micro-array bioinformatics. Micro-arrays (sometimes called DNA chips) are an approach to studying simultaneously the expression of hundreds or thousands of genes in a given organism.

The grant project is a multidisciplinary collaboration between computer scientists, who will perform the computer-science research part of the project and will develop the computer-systems software, and biologists, who will use the developed management infrastructure of the Expresso software to conduct their investigations.

The funded project will address all stages involved in micro-array experiments—design, processing, analysis, and interpretation of the biological results. Expresso’s design automates many of the tedious methodological aspects of conducting micro-array experiments and analyzing subsequent data. It will serve as a tool of powerful synergy between traditional laboratory work and the high-level goals of experimental biologists.

According to two of the investigators for the grant, Naren Ramakrishnan and Lenwood S. Heath of the Department of Computer Science in the College of Arts and Sciences, Expresso is a software system that can be used to conduct a variety of experimental-biology research projects. For example, with colleagues at North Carolina State University, the group is using micro-arrays and Expresso to identify genes that allow hoplobly pine trees to resist periods of drought. The result will be harder pine trees that will be economically valuable for the forest industry, the researchers said.

Also, with Malcolm Potts of biochemistry and Rich Helm of Wood Science and Forest Products, the researchers are analyzing micro-array data from both bacteria and human tissue to identify genes whose expression changes in the face of drying out. “The result will be human tissue that can be dried out and later rehydrated with water. This can help make the military less dependent on supply lines,” Ramakrishnan said. There are also other medical applications.

In collaboration with the International Potato Institute in Lima, Peru, the group is developing micro-arrays for the study of environmental stress and enhanced production of antioxidants in Andean potato varieties. “The result will be more economically productive” (See BIOINFORMATICS on 3)

University developing transportation, parking master plan

By Sherri Box

The university is going through the process of developing a transportation-and-parking master plan that will address the lack of available parking spaces on campus.

The Virginia Tech Office of Transportation manages over 13,000 parking spaces in 71 surface parking lots and is responsible for permits sales, parking enforcement/appeals, lot maintenance, pedestrian and bicyclist issues and coordination of transit issues with surrounding communities. With a total campus population of over 30,000, the administration realizes that efficient parking, effective traffic management and mass-transit services are critical to the continued growth and success of the university.

Under the guidance of a steering committee (Steve Mouras, director of transportation; Scott Hurst, university architect; and J.B. Sutphin, division head, site and infrastructure development), the university has contracted the services of Hayes, Seay, Matern & Mattern (HSMM). HSMM is conducting a detailed analysis and develop a master plan (www.ot.vt.edu/masterplan) to identify transportation and parking needs for the next 10 years. The study area involves the main campus only. In addition, the plan will propose actions (i.e. new construction and/or procedural changes) to meet these needs.

Options under consideration are expanding surface lots, pro’s and cons of building parking structures (garages), identifying intersections that require increased management (traffic signals), discouraging single-occupancy vehicles (SOV’s) on campus, assessing the viability and benefits of a pedestrian-friendly zone in the core campus areas (Drillfield), expanding the use of alternative transportation options (i.e. bike/walking trails, bus transit, carpooling, ridesharing, park and ride), reducing the volume of drive-through traffic on campus (traffic without a campus destination), estimating the cost of new construction and maintenance, and recommending methods of self-funding (e.g. increases in permit cost).

The scope of the HSMM project is assessment of current operations, parking supply analysis of current operations, parking supply (See UNIVERSITY on 4)

Engineering students win national aircraft-design competition

By Liz Crumbley

For the seventh time since 1990, Virginia Tech engineering students have placed first in the nation in the Undergraduate Team Student Design Competitions sponsored by the American Institute of Aeronautics and Astronautics (AIAA).

The 2001 competition was won by a 10-student Virginia Tech team that designed “Chimera,” a Naval common-support aircraft. Chimera is designed to combine the capabilities of four Navy carrier aircraft, said William Mason, professor of aerospace and ocean engineering in AOE. Mason and Nathan Kirschenbaum of AOE are faculty advisers for the team.

Chimera is a high-wing, twin-engine plane that can perform airborne early warning, electronic surveillance, anti-submarine/ anti-surface warfare, and carrier on-board delivery—feats performed by four separate Navy aircraft.

Chimera was named provost at WSU

By Sally Harris

Robert C. Bates, dean of the College of Arts and Sciences and microbiology professor at Virginia Tech, has accepted the position of provost and academic vice president at Washington State University (WSU) in Pullman, Wash.

As WSU’s chief academic leader beginning in January 2002, Bates will be responsible for all academic issues, ensuring the excellence of the WSU programs.

Bates, who has been at Virginia Tech since 1972, is very familiar with academic issues and the land-grant mission. As dean, he leads the largest college at Virginia Tech, which has six divisions encompassing the areas of the humanities, social sciences, physical sciences, mathematical sciences, (See BATES on 3)

Virginia Tech Police Offer Reward

By Sherri Box

In conjunction with other state agencies, the Virginia Tech Police Department is offering a reward of up to $5,000 for information leading to the arrest of the person or persons responsible for placing the suspicious device in Newman Library on Thursday, Oct. 11.

Anyone having information should contact Sergeant Larry Shindal at 1-8121 as soon as possible.

According to the department, on October 11 a person or persons placed a suspicious device in the fifth-floor men's restroom in Newman Library. Discovery of the device caused the evacuation of the library in addition to four other campus buildings. The Virginia State Police and FBI bomb squads determined, after several hours, that the device was a hoax.
Global Diversity symposium scheduled

There will be a one-day symposium titled “Teaching and Learning about Global Diversity” on November 6 in the Donaldson Brown conference center. The symposium will connect high-school teachers from Montgomery County and other nearby school districts who teach about global issues in social-studies classes with university faculty members who have expertise in these areas.

There will be a series of presentations and workshops that address a broad range of themes and different approaches to teaching and learning. Topics of presentations include Islam in World History, Geographic Literacy, Multicultural Communities, Digital History, Europe after Communism, America and the Third World, Cultural Contacts, and Standards of Learning in World History.

The program is supported by the colleges of Human Resources and Education, Arts and Sciences, offices of the Provost, Multicultural Affairs, Continuing Education, History, Teaching and Learning, the Center for Teacher Education. For more information call 1-8366.

CALS forms new department

By Stewart MacInnis

Agricultural and Extension Education is a new department in the College of Agriculture and Life Sciences as a result of combining two administrative units.

The new department incorporates the Agricultural Education Program, which is concerned with developing agricultural-education teachers for secondary and middle schools, and Extension Educational Programming, which provides education and support for current Extension professionals.

“This makes sense in a lot of ways,” said John Hillison, the head of the new department. “The two former units have very compatible clientele—agents teach people and agricultural-education teachers teach people. The principles of how they do it are the same. The faculty members from the two groups can help each other better serve both clientele groups. In fact, we’ve been working closely together for some time.

A proposed master’s program that will be available by distance delivery is being developed for Extension agents and agricultural

(See CALS on 4)

Robertson consults on Civil War movie

By Sally Harris

When James I. Robertson answered the phone and heard someone say, “Hello, Dr. Robertson. This is Robert DuVall,” Robertson’s first thought was “Oh, right, and I’m the king of….” But as he listened to the familiar voice that started asking him about the character of Robert E. Lee in the film-in-progress Gods and Generals, Robertson realized he really was talking to one of the actors he admired most.

Robertson has been hired to be an histori- cal consultant for the movie based loosely on the book Gods and Generals by Jeff Shaara, which has four main characters. However, Robertson said, Ron Maxwell, the director and screenwriter for the movie (best known for the landmark film Gettysburg), decided it would be hard to do justice to four main characters. He had read Robertson’s book Stonewall Jackson: The Man, The Soldier, The Legend and decided to focus the movie on Jackson, using Robertson’s depiction of the soldier. So he hired Robertson as a consultant to review the movie script for accuracy of fact. Also, if the filmmakers are adjusting the scenes and have questions about whether the events happened a certain way, they call Robertson. For example, he got a call to spend one recent weekend on the movie set watching scenes being shot and offering suggestions. But Robertson’s most important task is to counsel various actors, including DuVall, on how they should play their roles.

Filming on the movie started the last week in August, with one crew filming Jackson in Lexington and another filming Lee crossing the Potomac in Leesburg. A crew filmed battle scenes just outside Staunton and then moved to a farm south of Hagerstown, Md., for filming. Robertson accompanied the crew and Steven Lang, a well-known Broadway actor who is portraying Jackson in the movie, to Hagerstown, Lang’s invitation, to watch filming and help keep the movie accurate.

“I’ve been working with Mr. Maxwell and others since late spring,” Robertson said, “and hardly a week goes by that I don’t get one or two phone calls with a list of questions about the accuracy of this or the reality of that.”

“The biggest dividend so far has been not only to meet, but to become close friends with Robert Duvall,” Robertson said. “He’s the consummate actor. He’s played everything from the summate actor. He’s played everything from the Godfather to Lonesome Dove. The thing about him is that, when he asks a question, he listens to the answer. I find him very warm and engaging.” DuVall asks a lot of questions about the character of Lee and how he should be portrayed, Robertson said.

Although Robertson has met and talked

(See ROBERTSON on 4)
Phonebook and Campus Directory recycling: VTRC is collecting phonebooks and campus directories for recycling again this fall. Place old directories next to the stackable bins should collect all the directories and phonebooks can also be taken.

Some positions include state and University 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 EEO/AA employer committed to diversity.

FULL TIME
Six full-time food-service position available. Administrative Staff Assistant, 007876R, PB 3, VBI.

Agricultural Technician, 007874M, PB 2, CES.

Alternative Transportation Manager, 007223F, PB 4, OT.

Assistant Director for Capital/Reserve Projects, 0078704, PB 5, RCP.

Database Administrator, 007777R, PB 5, VBI.

Development Associate, 007871S, PB 3, Develop. and Foundation Services.

Enrollment Services Specialist, 007868R, PB 3, IDCL.

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

Facult Cataloger, 001227G, PB 3, Library Acquisitions.

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

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

Financial Planning Manager, 007765F, PB 5, BFP.

Food Production Supervisor, 000435H, PB 1, RDP.

Food Production Supervisor, 000359H, PB 1, RDP.

Food Stamp/Ebt Payment Accuracy Analyst, 007908B, PB 5, IPO.

Grounds Worker, 000846W, PB 1, PPG.

Housekeeping - Night Crew, 007114H, PB 1, RDP.

Housekeeping Manager, 000209W, PB 2, RDP.

Housekeeping Supervisor, 000286H, PB 2, RDP.

Housekeeping Worker, 002329W, PB 1, RDP.

Housekeeping Worker, 002005C, PB 1, Physical Plant.

Housekeeping Worker, 000696H, PB 1, RDP.

Housekeeping Worker, 000920U, PB 1, UUSA.

Laboratory Specialist, 007865R, PB 3, VBI.

Lactory Specialist, 007707B, PB 3, CE.

Laboratory Technician, 007787M, PB 3, PPWS.

Marketing/Conferences Specialist, 007875B, PB 3, RDP.

Medical Technologist, 002596M, PB 4, VTH.

Multimedia Systems/Applications Specialist, 002054A, PB 4, VBS.

Office Services Specialist, OLC068F, PB 2, Hokie Passport.

Sous Chef, 000940H, PB 3, RDP.

Transportation Planner, 007498F, PB 4, OT.

CAREERS IN TECHNOLOGY
Virginia Tech Recycling Update

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and performing fine arts, as well as the university’s three ROTC units. The college has 625 faculty members, 170 support-staff members, 1,000 graduate students, and more than 7,000 undergraduate students.

“ln his nearly three decades here, Dean Bates has been a great asset to the university as well as to the College of Arts and Sciences.” President Charles Steger said. “Many of the college initiatives developed during his tenure as dean have been models for university actions. We are sorry to lose such an innovative leader, but we wish him the best in his new position.”

When I came here as a young assistant professor, I had no idea I would eventually have the opportunity to interact with such a variety of outstanding people in so many disciplines and administrative offices, both here in Blacksburg and in our other parts of the world, in a collegiate environment.”

“While I have worked hard to make a difference, I could not help but be pleasantly surprised by the overwhelming amount of positive feedback that I have had from people here as I struggled to make the decision about the new position. I assure all of you that my life has been enriched immensely by having served alongside so many of you all these years.”

During his tenure as dean, Bates has led the college in the development of a tradition of strong collaboration that facilitates the creation of cross-disciplinary instructional and research teams. As a part of that collaborative support structure, the college developed several instructional-technology initiatives, including the Cyberschool Project, the first web-based on-line course, the Math Emporium Learning Center, the Chemistry Learning Center, and on-line master’s-degree programs.

Steger opens Vecellio Distinguished Lecture Series

By Chema de la Garza

President Charles Steger opened the Vecellio Distinguished Lecture Series recently, introducing Wayne Clough, the former dean of the College of Engineering, as the first Vecellio lecturer.

Steger said in his opening remarks that “…this special Vecellio family has long embodied the spirit ‘Ut Prosim,’ serving the university through both their generosity and leadership. Throughout the years, they have consistently shown their love and loyalty for Virginia Tech. We are truly fortunate to have them as friends of the university.”

Clough, president of Georgia Tech and the former dean of the College of Environmental Sciences and Engineering at Virginia Tech, spoke on “Society and the Built Environment: What Lies Ahead.” He said in his lecture, Clough spoke of the multiple challenges the construction industry will face in the near future as a result of the building boom in civil infrastructure in the US. He emphasized that emerging information technology and advanced in smart materials are important developments to be able to meet the infrastructure challenges.

“This lecture series will provide an opportunity for members of the campus community to interact with industry leaders of international prominence. Faculty members and students alike will benefit from the knowledge and experience of the industry’s top experts. This lecture series will enhance our already superb program in Construction Engineering and Management and will add visibility and prestige to Virginia Tech’s engineering programs,” Steger said.

In addition to the lecture series, the Vecellio endowment will fund a named professorship, undergraduate scholarships, and graduate fellowships. Hannah L. Boyd, a graduate student in the College of Science, was named this year’s Vecellio undergraduate scholarship recipient. The team includes Ramakrishnan, Heath, and Layne T. Watson of the Department of Computer Science in the College of Arts and Sciences, Ruth Greene Alscher of plant physiology, and weed science in the College of Agriculture, and Jennifer Weller of the Virginia Bioinformatics Institute. Ramakrishnan, Heath, and Weller are members of the problemsolving environment (PSE) group at Virginia Tech; this award is the third Next Generation Software award to the PSE group. The Expresso award is among the largest made in this year’s competition.

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and nutritious potato crops, which will benefit the farmer and consumer as well,” Heath said.

The team includes Ramakrishnan, Heath, and Layne T. Watson of the Department of Computer Science in the College of Arts and Sciences, Ruth Greene Alscher of plant physiology, and weed science in the College of Agriculture, and Jennifer Weller of the Virginia Bioinformatics Institute. Ramakrishnan, Heath, and Weller are members of the problem-solving environment group at Virginia Tech; this award is the third Next Generation Software award to the PSE group. The Expresso award is among the largest made in this year’s competition.

Students building solar house for decathlon

By Sarah Newbill

Students from Virginia Tech’s departments of architecture, industrial design, building construction, and mechanical and electrical engineering will participate in the national Solar Decathlon, a new intercollegiate competition that challenges students to design and construct a fully self-sufficient, solar-powered house.

The U.S. Department of Energy, National Renewable Energy Laboratory, BP Solar and the American Institute of Architects are sponsoring the competition.

During the next year, the student team will design a solar-powered house that meets criteria in 10 competition areas. The houses will be judged on aesthetics, livability and the ability to maintain comfortable interior temperatures. Houses must be designed to ensure normal operation of refrigerators and freezers, provide efficient lighting, and provide all of the energy necessary to heat water for common uses such as bathing, laundry, and dishwashing. Students will develop a computer simulation of the annual energy use by the house.

Each successful house also will provide enough power to operate a small home-based business and to charge an electric vehicle—all while relying on the sun’s energy as the primary power source.

Communications will be a key component of the project, as students will be charged with developing a communications plan and a web site (http://www.caas.vt.edu/voltdc/ index.html) and other outreach materials to effectively explain the solar energy and energy efficiency technologies used in the house.

The goals of the program are four-fold—to illustrate how solar energy can improve quality of life; to teach the solar decathletes and the general public how energy is used in their daily lives and to illustrate the energy intensity of daily activities; to demonstrate that existing market-ready technologies can meet energy requirements of daily activities by tapping into the sun’s power; and to meet these needs while providing an attractive structure in which to live, work, and play.

In fall 2002, student teams will transport their houses to Washington, D.C., and assemble them on the National Mall, where they will be judged in the 10 separate contests. During the week-long decathlon, the public can watch the students work and tour the solar-powered houses.

Competing with Virginia Tech will be Auburn University, Carnegie Mellon University, and the Virginia Standards of Learning (SOL).

“We have been working on this program for the past three years and have had great success in school divisions where we have run pilot training sessions,” said John R. Wenrich, associate director of the Institute for Connecting Science Research to the Classroom. VITAL training will be carried out by the Governor’s Best Practice Centers. The centers were developed by the Virginia Department of Education in collaboration with all state universities to help enhance professional development among teachers.

The knowledge base acquired through the VITAL training program will assist school leaders to make more effective management decisions concerning technology. Administrators will learn to develop high-calibre local training programs for teachers that will lead to better integration of technology in the classroom. Teachers will use the Virginia Technology Standards for Instructional Personnel to help students meet their goals. Students will then learn to select and use appropriate technologies to gather, process, analyze data, and report information related to an investigation.

The ICSRC has continually fostered corporate and public-school partnerships to bring university research into K-12 classrooms. Led by founding Director Joy E. Colbert, and coordinated by the Virginia Tech College of Human Resources and Education, the ICSRC brings together faculty members from the colleges of Agriculture and Life Sciences, Architecture and Urban Studies, Arts and Sciences, Engineering, Natural Resources, and Veterinary Medicine. The faculty members connect with K-12 teachers who share common interests in enriching science and math education.

“Our goal is to assist teachers in leading students to connect with practicing scientists and engineers, to act as field scientists themselves, and to engage in the research process,” said Colbert.

The ICSRC’s Technology Management for School Leaders (TMSL) is a program that will aid schools improve students’ SOL scores by educating teachers and administrators in instructional technologies. The premise of TMSL lends itself to the philosophy behind VITAL. In the TMSL program, information fundamental to making cost-effective, instructional management decisions regarding instructional technologies is made available to school administrators through a continuously updated web site, www.tmsl.org.

TMSL is one component of the VITAL program, has been introduced in each of the state’s eight regions through the Governor’s Best Practice Centers. Within each region of the state, there are 12-17 school divisions that utilize these centers.

Robertson

Continued from 2 with Duvall, he has not yet seen him dressed as Lee. “I’m anxious to see how much he looks like Lee,” Robertson said. “The agent said the first time they put him in uniform was the first time he believed in reincarnation.”

Robertson will be involved through the end of the movie, which is tentatively scheduled for release to theaters at Christmas of 2002.

University

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and demand, future parking alternatives, transportation alternatives analysis, parking and operations management, management of finances, and short-term and long-term recommendations.

The University and Parking Committee is representing faculty for this project. The committee which consists of faculty and staff members, graduate and undergraduate students, also added representatives from the Town of Blacksburg, Blacksburg Transit, Roanoke-Herndon-Hollins-Hollins Foundation and vendors group for this effort.

Customer input and participation is a critical component in assessing the university’s current and future transportation needs. An online survey was administered to the general public from September 1 through October 15. A Transportation and Parking Fair was held at DBHCC, Alumni Hall on October 24 hosted by the HSMM planning team to solicit input and reaction to preliminary thoughts on the master plan. The final plan is expected to be completed by early December, with information and updates as well as the results of the survey to be made available at www.ot.vt.edu/masterplan.