Plant biology, computer science team receives second NSF grant

By Susan Trulove

A team of university computer scientists and plant biologists has received a half-million-dollar grant under the National Science Foundation (NSF) Information Technology Research (ITR) program to do research aimed at understanding the role of stress resistance mechanisms in plants by developing multi-modal models that integrate experimental data, databases, and existing knowledge from scientific literature.

The award comes on the heels of a $600,000 award from the NSF Next Generation Software program received last year. At that award supports work by some of the same researchers to produce a software package called Expresso, which automates much of the methodology involved in conducting micro-array, or gene chip, experiments and analyzing subsequent data. The NGS award also supports further investigation of molecular/geonomic responses in loblolly pine to the repeated cycles of drought stress.

The ITR grant supports new approaches to representation and manipulation of networks within a computer to provide entirely new ways to work with large data sets, visualize findings, and share knowledge. Using Arabidopsis as a model, the Virginia Tech scientists will elucidate the genetic sequence of events that enable plants to cope with drought by applying network representations and algorithms to help fill gaps in what is known of biological pathways for specific functions or results.

Principal investigators on the ITR project are Lenwood S. Heath, Layne T. Watson, and Naren Ramakrishnan in computer science and Ruth Grene and Boris I. Chevone in plant pathology, physiology, and weed science. The team’s proposal was one of only six small ITR’s awarded out of 40 small ITR proposals submitted in the general field of computational biology.

“In the Expresso project we study gene expression patterns for plants responding to stress using the loblolly pine as a model,” Heath said.

Grene, who has studied stress since 1980, said she previously studied one protein and one gene at a time. “Now we study thousands of genes at a time.”

Her research started with air pollution as the stress. She brought that interest to Virginia Tech in 1988, where Chevone was also studying plant response to air pollution. “In 1995, I became aware of the technological breakthroughs that allow us to look at many genes at once by using micro-arrays or gene chips,” she said.

Now, scientists work worldwide use micro-array technology. “But I don’t know of anywhere else there is the close interaction between the computational scientists and (See PLANT on 2)

Herdman named research computing director

By Susan Trulove

Terry Herdman has been named director of research computing effective today. The announcement was made by Earving Blythe, vice president for information systems, and Leonard Peters, vice provost for research.

Research computing denotes any use of computers that is an integral part of the research process. Research computing includes the capability to do high performance computing and to access fast, large, high-performance computers, such as at the Oak Ridge National Laboratory, Herdman said. “What it means is that a faculty member or student should have easy access from their desktop to computers on and off campus through good networks, should have the necessary hardware and software to do their research, and should have access to systems administration to solve a problem and keep systems up and running,”

Herdman, who has been a faculty member in mathematics since 1974, has been director of the Interdisciplinary Center for Applied Mathematics for 15 years and will continue those duties. “It’s a good fit because the people involved with research computing also come from many disciplines,” he said.

For the past year, he has been head of the task force created in cooperation with the Commission on Research and charged by Peters and Blythe to study research computing at Virginia Tech. The taskforce submitted their report and recommendations to the Commission on Research, Blythe, and Peters this past summer. “The report was shared with the university administration and they are supportive,” Blythe said.

“This position means someone is collecting information regarding the needs of faculty members and students who use computers in their research and addressing those needs,” Peters said. “Terry is committed to (See HERDMAN on 2)

Pet adoption day scheduled at Veterinary College

By Jeffrey J. Douglas

Several local animal-welfare organizations and the Community Foundation of the New River Valley will team with students in the Virginia-Maryland Regional College of Veterinary Medicine to present the area’s first Family Pet Adoption Day on Saturday, Nov. 9 from noon until 4 p.m. on the college’s campus.

More than 40 animals currently in the custody and care of a variety of area shelter and adoption organizations will be on site. Participating organizations include Pound Pals of Radford, Giles Animal Rescue, Floyd County Humane Society, Virginia PAWS (Virginia Partnership for Animal Welfare and Support), Dalmation Rescue of Southwest Virginia, Pulaski County Humane Society and Vet Students with Fosters.

DVM students from the VMRCVM will evaluate the health and condition of participating animals, interview prospective owners in an effort to match family lifestyles with animal characteristics, and implant an identifying microchip in each adopted animal. If a micro-chipped animal is ever lost, local shelter projects or veterinary clinics can use a special scanner to help locate the animal’s owner.

The Assisi Clinics of Virginia, Inc., a non-profit charitable organization that works to resolve the animal over-population crisis by offering free and low-cost animal spay and neuttering services through mobile veterinary surgical clinics and conducting public-information campaigns, will also be on site during the day. The public will also have an opportunity to tour the Angels of Assisi Spay Shuttle and Adoption Trailer.

Presented in conjunction with the Humane Society of the United States’ National Animal Shelter Appreciation Week, the “Family Pet Adoption Day” is designed to facilitate pet adoptions and raise awareness of the importance of pet responsibility.

Mellon award aids professor in expanding Virtual Jamestown into world-studies site

By Sally Harris

If a teacher tells a classroom full of seventh graders that “x” number of people died of starvation and diseases in Colonial Jamestown, the students see a number. If the teacher takes the students on line to Virtual Jamestown, where they can read “The sixth of August there died John Ashie of the bloudie Flixe. The ninth day died George Flowre of the swelling,” and on and on, they get a grim picture of people being wasted away by strange diseases. At Virtual Jamestown, the students see a number. If the teacher takes the students on line to Virtual Jamestown, they get a grim picture of people being wasted away by strange diseases.

Virtual Jamestown is a web site created by Crandall Shifflett, professor of history and director of graduate studies for the Department of History. It is a digital research, teaching, and learning project that explores the legacies of the Jamestown settlement and "the Virginia experiment." It allows researchers and students to see actual court and other public documents, firsthand accounts of people such as indentured servants, pictures of the stowage of a British slave ship with slaves chained head to toe and side by side, sketches of the wedding of John Rolfe and Pocahontas, histories and a timeline of the events in the New world, and many other documents that give a vivid picture of life in Colonial Jamestown. As a work in progress, Virtual Jamestown aims to shape the national dialogue during the 400-year anniversary observance in 2007 of the founding of the Jamestown colony.

An award-winning site, Virtual Jamestown has garnered another grant for Shifflett, a $219,000 appropriation from the Andrew W. Mellon Foundation. The award will allow Penn students to participate in expanding Virtual Jamestown into a world-studies site (See MELLON on 2)
**Activities**

**Music Program, 8 p.m., Squires Recital Salon: Faculty Recital.**

**Monday, 4**

**University Council, 3 to 5 p.m., 1045 Pamplin.**

**Wednesday, 6**

**YMCA Slide Show, noon, Cranwell Center.**

**Friday, 8**

**YMCA Crafts Fair, noon to 8 p.m., Squires ballrooms** (through 11-10).

**International Club Program, 5 to 6:30 p.m., Cranwell Center.**

---

**Seminars**

**Friday, 1**

**MCBB, 12:20 to 1:10 p.m., Fralin auditorium: Brian P. Helmke, UVa.**

---

**BULLETINS**

**Employees request leave donations**

Four Virginia Tech employees in Physical Plant, Purchasing, Recreational Sports, and Residential and Dining Programs, have 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/.

---

**PLANT**

Continued from 1

*plant biologists who we have built at Virginia Tech,* Grene said. “That is where we are breaking new ground.”

The Virginia Tech researchers are looking for the qualities or genetic mechanisms that allow a plant or species to cope with stress, particularly drought. “We are dealing with entire pathways, and interactions between genes and pathways, not single genes. Micro-arrays are a first step,” Grene said.

“Biological pathways are the motivation,” Heath said. “They are one of many kinds of networks that are important in biology. We want to formalize networks, represent them computationally, and make more powerful use of the resulting multi-modal networks.”

“Computer networks are relatively homogeneous,” Ramakrishnan said. “But the proposal is for multi-modal networks, where the connections are made between different types of entities and involve a variety of links. The end goal is to bring together sources of information and data—from the literature and our own experiments—and piece together a network that summarizes the biological sequence of events that enables a plant to cope with drought.”

---

**MELLON**

Continued from 1

Shifflett to expand the Virtual Jamestown site into an Atlantic World Studies site with surveys of archaeological objects in the Jamestown area and toll-free digital collections in Atlantic World Studies. The project will allow researchers and teachers to compare Jamestown with the Spanish, French, and Dutch colonization efforts and examine the origins of American culture, Shifflett said.

The Mellon award is a two-year planning grant to develop new partnerships and collaborations with the hope of establishing at Virginia Tech an Institute for the Study of the Atlantic World. Shifflett will travel to Europe to talk with archivists, directors of centers in humanities computing, and scholars in Atlantic World Studies. He will form a new partnership with scholars at the University of East Anglia near London, which has a Virtual Norfolk project of 17th-century immigration and official documents, and with Virtual St. Augustine, a site in Florida spawned by an NEH teacher’s seminar Shifflett co-directed with William Thomas, director of the Virginia Tech Center for Digital History.

The Mellon Jamestown project involves collaborations with Colonial National Historical Park, Jamestown Rediscovery, and others involved in preparations for the 2007 observance of Jamestown’s founding. “With the interest of the Mellon Foundation, the resources of the ongoing Virtual Jamestown project, and new partnerships with Atlantic World scholars and archivists in the Caribbean, Great Britain, and the United States, we have the opportunity to create a Virginia Tech center of national and international prominence in digital history and Atlantic World Studies,” Shifflett said.

Virtual Jamestown has previously received a $205,000 grant from the National Endowment for the Humanities (NEH) and was selected as a top humanities site for inclusion in the NEH EDSTEEN Project featuring “the best of the humanities on the web.” It can be seen at http://jeffersonville.virginia.edu/vcdh/jamestown/. Shifflett hopes to secure funds in addition to the Mellon award for the Institute for the Study of the Atlantic World.

**PET**

Continued from 1

awareness of the animal over-population issue, according to Marie Suthers-McCabe, Extension specialist in animal-human interaction and director of the Center for Animal Human Relationships (CENTAUR).

“Millions of unwanted animals are euthanized every year in shelters around the country,” Suthers-McCabe said. “But shelters and organizations around the country are beginning to make a difference by helping locate homes for unwanted animals and by encouraging spay-neuter and responsible ownership.”

All of the animals looking for new homes will be spayed or neutered, be current on immunizations against infectious diseases, and be free of obvious abnormalities at the time of examination. VMRCVM veterinary students will conduct complete physical examinations on all animals and a health record will be attached.

The students will also administer adoption questionnaires to prospective owners and make recommendations to the custodial sheltering organization about the suitability of prospective matches. The humane organizations will then check references and conduct home visitations before placing the animal. No animals will be allowed to go home with their new families on the day of the event and there will be an adoption fee for all animals.

The event will be held in front of the VMRCVM, which is located on Duck Pond Drive. In the event of bad weather, the event will be held on November 16. For more information, contact Lynn Chipkin at Lynnchipkin@hotmail.com or Lila Borge Wills at vapaws@oneunim.com or 651-4530.

---

**Geological Sciences, 3:30 p.m., 4069 Derringer: Edward Stoller, Cal Tech.**

**MSE, 3:30 p.m., 100 Hancock: Zak Fathi, Lambda Technologies.**

**STS, 4 p.m., 132 Lane Hall: Lee Zwaniger. CANCELLED.**

**Monday, 4**

**Biomedical Sciences, Engineering, 3 p.m., 110 Holden: Shirley Luckhart.**

**Biochemistry, 4 p.m., 223 Engel: Squire Booker, Penn State.**

**Horticulture, 4 p.m., 409 Saunders: Zvezdana Pesic, NCSU.**

**Thursday, 7**

**Career Services, noon to 1 p.m., 217 Squires.**

**Friday, 8**

**Geological Sciences, 3:30 p.m., 4069 Derringer: Susan Beck, University of Arizona.**

**MSE, 1:30 p.m., 100 Hancock: Sumitra Subrahmanyan.**

---

**HERDMAN**

Continued from 1

meeting needs of the university’s researchers. We are pleased he has agreed to head this critical effort.”

The appointment continues until June 30, 2005.

“The first step is to see if we can implement the task force’s recommendations regarding systems administration for research computing, create a more robust research computing infrastructure, provide services such as storage and networking,” Herdman said.

“It is important to get the people here to think about what is best for Virginia Tech, not only within their own disciplines.”

He plans to meet with groups and individuals and said he wants to hear from any researcher who use scientific computing. He will make a presentation to deans and center directors at the annual research retreat in mid-November.

“It’s a tough assignment but I’m ready for it. I’ve done it in the past. If we are to increase the university’s research ranking, we have to have first-rate research computing,” Herdman said. “I’m not going to let budget cuts affect what I try to do. We have to look at where we want to be in three years and we can’t wait two
Changes Made in Establishing Accrual Rates for Annual Leave

By Rosie Higdon, senior manager, employee administration and HRIS

Classified employees hired on or after March 16, 1998, have their annual leave-accrual rates based on all periods of salary state service. However, the state’s rules have changed several times over the years creating inconsistencies, and the state’s Department of Human Resource Management has simplified the annual leave accrual method. These changes are described below.

Effective Jan. 10, 2003, all employees’ annual leave-accrual rates will be based on all salaried state service. All salaried classified service, whether part-time or full-time, and any employment in salaried faculty positions will be counted in setting the annual leave-accrual rate. Examples of service that still will not be included are adjunct faculty appointments, hourly employment, and service in local, federal, or other non-state entities.

The first pay period to reflect the accrual rate change will be January 10 through 24, 2003. Any additional leave will be accrued during the pay period and available for use by employees on Jan. 25, 2003. No retroactive changes shall be made in any employee’s accrual rate, leave award, or any other record or benefit as a result of this change. No other leave balance or process will be affected.

To qualify for re-calculation of leave-accrual rates, employees with non-consecutive state service with Virginia Tech must notify the Personnel Services Office and provide a review of their records. For any period of prior salaried state service not currently included in determining their annual leave-accrual rates, a signed statement by a Human Resource official of the relevant agency must be provided for verifying the dates of the employee’s service there.

To request a review of records, fill out the form titled, “Request for Review of State Employment Records” and return to Personnel Services by December 6 (revised deadline). The second form, “Request for Employment Verification of State Employment,” is the form used in requesting agencies to verify dates of employment. The other state agency will return the form to Tech Personnel Services. Make copies of the form before sending it to your agency.

For more information, contact Donna Lafon at dafon@vt.edu or 1-8407.

Thorp to provide expertise for national Lewis and Clark Bicentennial

By Sally Harris

It’s been nearly 200 years since Meriwether Lewis and William Clark and more than 30 explorers set out on their Corps of Discovery across the American West as the future of the country to the President Thomas Jefferson’s first vision of the Lewis and Clark expedition, including Southwest Virginia and national connections, and can tell some stories probably not found in many places. He is the author of Lewis and Clark: An American Journey; and, to write the book, he read all extant journals, including those of the captaints and the enlisted men, plus all the correspondence from the journey.

Thorp’s book covers the expedition from President Thomas Jefferson’s first vision of the West as the future of the country to the celebration the president held on the group’s arrival back home. Designed for the general reader, the book includes the plans and preparations for the trip, the journey up the Missouri, the winter spent in Mandan, N.D., the travel Divide into unknown territory and across the Continental Divide, the stay at Fort Clatsop in Oregon, and the trip home. Thorp can also talk about such things as Clark’s missing Jefferson’s formal celebration of the expedition’s arrival home because Clark was courting his future wife, Judith “Julia” Hancock, at her home in Fincastle, Hancock’s father also owned a house in Elliston, now a historical landmark, called Fotheringay.

Thorp has been invited to serve on a panel, “Supplied For Survival: Meriwether Lewis at Harpers Ferry,” a Lewis and Clark Bicentennial Commemoration at Harpers Ferry National Historical Park, w. Va., March 28, 2003.

Jefferson had asked Lewis and Clark to find a transcontinental water route (not to map the Louisiana Purchase). While they did not find such a route (none exists), they succeeded in traveling over land from the Missouri to the Columbia River, essentially opening up the West to settlers. On their way, Lewis and Clark studied the flora and fauna, the cultures, and the weather and “established trading relationships with tribes,” according to the designation by Bush of the Lewis and Clark Bicentennial 2003-2006.

Beginning Jan. 18, 2003, at Monticello, the national commemoration of the Lewis and Clark Expedition will include such events as the arrival in Saint Charles, Mo., of a replica of Lewis and Clark’s keelboat, the group’s celebration of the country’s first Independence Day west of the Mississippi by “firing its swivel cannon and enjoying an extraration of whiskey,” a re-enactment of the First Council between the expedition and the Otoe and Missouri Tribes, a celebration of Clark’s first view of the Pacific Ocean in Oregon; and events along their trip back to the East. On their journey, Lewis and Clark received great help from many people, including the American Indian Sacajawea, who helped guide the expedition through her homelands and helped translate among different groups.

Thorp can answer many questions: Why did Jefferson order the trip? Because the British had started looking for an all-water route across the country and Jefferson was afraid they would find it first. Why did Jefferson want a route across the country? He hoped to go by boat from the Missouri to the Columbia, across the continent to the Pacific Ocean. In the end, they did not find such a route, but the expedition did have crossed the Rocky Mountains, from her brother, chief of a Shoshone band.

The locations of official events during the bicentennial can be found on the web at www.lewiscandclark200.org.
Seven hundred middle schools and high schools in Virginia have just received copies of a new publication, *Bringing the Civil War to the Classroom: A Guide for Teachers,* published by the Virginia Center for Civil War Studies at Virginia Tech. Civil War historians James I. Robertson Jr. and William C. Davis wrote this new tool for educators, designed to assist them in making the Civil War come alive for their students.

Students in Virginia schools study the Civil War in the eighth and eleventh grades. The two scholars developed the 90-page classroom guide with the assistance of a board of educational consultants representing high schools in Wisconsin, Colorado, California, North Carolina, and Virginia. "The Civil War is the most defining moment in American history," said Robertson, executive director of the center, "yet, it more than any other event in our past, has fallen victim to myth, legend, political correctness, sectionalism, and romanticism. Our booklet is designed for the teacher who wishes to bring the whole dramatic picture into a clear focus that will both educate and enlighten our children."

The publication was made possible by a grant from Nancy Baird of Harrisonburg, whose father was a faculty member at Virginia Tech. The guide may be ordered for $10, including postage, from Robertson at the Virginia Center for Civil War Studies, Department of History, 457 Major Williams Hall.