

SPECTRUM

Virginia
Tech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

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Peters to leave university for DOE national laboratory

By Susan Trulove

Leonard K. Peters, vice provost for research, will leave the university and become Battelle senior vice president and director of the Pacific Northwest National Laboratory in Richland, Wash. Peters assumes his new position on April 1.

Pacific Northwest National Laboratory (PNNL) is a U.S. Department of Energy (DOE) facility doing research in the areas of environment, energy, national security, and fundamental sciences. Battelle, based in Columbus, Ohio, has operated the laboratory for DOE since 1965.

"This is a significant opportunity for Dr. Peters for which his 10 years at Virginia Tech, and indeed his entire professional career, have prepared him well," said President Charles Steger. "Len's leadership at Virginia

Tech, including his support and respect for the faculty and students, increased the institute's stature as a research university making it realistic for us to pursue top-30 status."

Peters came to Virginia Tech from the University of Kentucky in July 1993 to become vice provost for research and dean of the Graduate School. At Tech, he established the ASPIRES program to stimulate new research capabilities, which provided more than \$8 million in seed money enabling faculty members to advance their scholarship and submit proposals for further sponsorship. Research expenditures have grown from \$135.8 million to more than \$230 million at Virginia Tech since 1993, and royalties from patents and copyrights have grown from \$626,000 to \$2.3 million.

"I've enjoyed being a member of the university community and am proud to have had the

privilege to work with the distinguished faculty at Virginia Tech," Peters said.

"During the year and a half that I've worked with Len, I've valued the wonderful leadership he provides for the research community at Virginia Tech," Provost Mark McNamee said. "He is a successful planner and innovator and an articulate advocate for research and scholarship at a critical time in our growth as a research university. I wish him great success as he takes on a wonderful new opportunity."

Peters initiated a number of partnerships, including one with Carilion Health Services and the University of Virginia to create the Carilion Biomedical Institute. He was instrumental in bringing together six core universities led by the University of Tennessee (UT) and Battelle Memorial Institute that won the management

(See PETERS on 4)

HUD releases report on university construction research

By Sarah Newbill

Recognizing the importance of construction processes for the homebuilding industry, the Department of Housing and Urban Development (HUD) has contracted with Virginia Tech researchers to address issues relating to building new homes more quickly and efficiently while still keeping homes affordable and at a high standard.

Through a series of research publications, a cross-college team has been working since 2000 through the University's Virginia Center for Housing Research (VCHR) to bring a greater level of "innovation and industrialization" to the housing industry. The team consists of three principal investigators—Michael O'Brien in architecture, Ron Wakefield and Yvan Beliveau in the building-construction department—and several graduate students. They have investigated high-tech developments in the construction and manufacturing industries, and how those developments could be integrated into the construction of today's house.

HUD just released Phase III of *Industrializing the Residential Construction Site*, which deals with production systems and exploring the impact of information breaks on actual workflow. Technical and managerial approaches are studied that will lead to more rapid construction production, with better planning and coordination, and with more efficient material and labor use.

A full report can be downloaded at <http://www.huduser.org/publications/manufhsg/ircs3.html>.

The overall goal of this multi-phase HUD-sponsored research project is to identify, map, and refine the overall process of residential construction. The first report, released in 2000, spoke in general terms about the means and methods available for integrating and industrializing the housing-construction site and the housing industry. It described the history of and possibilities for industrialization in the industry, and laid out five areas that best contained the possibility of transforming the construction site: production integration, operations integration, performance integration, information integration, and physical integration.

HUD chose to have the team explore "information integration" in Phase II, released in 2001, which dealt with information mapping and how information exchanges, relationships, and mechanisms shaped construction operations. As the common denominator on all construction sites, information is a critical beginning for understanding integration, and one that HUD believes is central to this ongoing research. The researchers were recently awarded \$175,000 by HUD to fund Phase IV, which will model specific builder processes and evaluate the advantages or disadvantages to alternatives/revisions to the production systems studied in Phase III. The Phase IV

(See HUD on 4)

Researcher finds work not 'haven' from home

By Sally Harris

Home is still where the heart is, a Virginia Tech sociologist's research shows.

Even though more and more women became employed in the past three decades, they did not increasingly look to work as a haven, according to Jill Kiecolt, professor of sociology. Kiecolt studied more than two decades of surveys of adults in the United States done by the National Opinion Research Center at the University of Chicago, looking at four categories of workers with families: those who saw home as a haven, those who saw work as a haven, those who were satisfied with both, and those with little satisfaction with either.

"Previously," Kiecolt said, "some sociologists thought work had become more satisfying than home. That theory implied that the group that found work more satisfying than home had grown over time. It turns out that men haven't changed, but the percentage of women who find work more satisfying than home has actually shrunk a bit. And it was never a very large group to begin with."

During the period studied, in which 9,761 employed family men and women were surveyed, those who found home a haven increased from 32 percent to 40 percent and those who found work to be their haven decreased from 16 percent to 11 percent.

Another myth from previous research was that the increase in finding work a haven accounted for the rise in the number of hours that people worked. "But, in fact, the category of people more satisfied with work than home shrank," Kiecolt said, "so finding work a haven could not explain the increase in work hours." Although she has not studied the actual reasons for the increase in

(See RESEARCHER on 4)

University wildlife professor helping to save endangered Florida panthers

By Tara Laffey, University Relations intern

With few Florida panthers now in existence, Mike Vaughan, professor of wildlife and sciences in the College of Natural Resources, has been appointed to serve on the Florida Panther Scientific Review Team (SRT). Vaughan and other SRT members have made several trips to Naples, Fla., to interview state and federal biologists directly involved with the recovery of the Florida panther.

Currently, the SRT is reviewing literature and scientific research from the past 20 years on this endangered species. After evaluating the veracity of the conclusions, the researchers will prepare a report for the U.S. Fish and Wildlife Service and the Florida panther team to use as they develop a recovery plan. The four-member team of scientists began its research last summer and hopes to issue their report by June of this year.

The endangered Florida panther is a large, long-tailed cat with a great deal of color variation

that once inhabited many southeastern states and the lower Mississippi River Valley. The Florida panther is a subspecies of what Virginians and others call the cougar or mountain lion. Of all North American cat species, the Florida panther is the most endangered.

Numerous sightings of the Florida panther are reported each year, but it is unlikely that the population of these panthers exists outside of Florida. Vaughan says, "Approximately 75 to 85 Florida panthers are left in the wild."

"The Florida panther continues to be a victim of habitat loss, environmental contaminants, motor-vehicles collisions, prey scarcity, and even immune deficiencies," Vaughan said. "The SRT report will help those directly responsible for the recovery of the Florida panthers determine the most effective way to save this endangered species."

To obtain more information on the Florida Panther Scientific Review Team contact Vaughan at 1-5046, or mvaughan@vt.edu.

Faculty Diversity Little Changed Over 30 Years

By Annette Calhoun

Faculty statistics reflecting national and Virginia Tech trends were presented by Cathy Trower, speaker and moderator at the Faculty Diversity and Retention panel discussion held February 12. Trower is senior research associate and principal investigator, Study of New Scholars, at Harvard University.

Despite 30 years of affirmative action, universities remain largely white and largely male. Trower compared national and Virginia Tech percentages in various categories. Nationally, 35 percent of full-time faculty members are female. At Virginia Tech, the figure is 24 percent. Trower noted that nationally, 80 percent of full professors are male while Virginia Tech lists 90 percent. Tech closely mirrors the national averages in minority full-time professors (11 percent) as well as the percentage of full professors who are white (90 versus 91 percent, respectively).

Participating in the faculty diversity and retention panel were Ben Davenport, from the Board of Visitors; Mark McNamee, provost and vice president for academic affairs; Karen DePauw, vice provost for Graduate Studies and dean of the Graduate School; and Professor Lucinda Roy, alumni distinguished professor and department chair of English.

"Faculty Diversity: New Vision, New Voices" is part of a pilot program of a series of workshops and forums for obtaining and retaining under-represented faculty," according to

(See FACULTY on 2)

ACTIVITIES

EVENTS

Friday 21

Last Day to Drop.

Saturday 22

Men's Basketball, 1 p.m.: At Notre Dame.

Women's Basketball, 2 p.m., Cassell Coliseum: Villanova.

Multimedia Presentation, 7 p.m., DBHCC: "What It Means to be a Virginia Indian in the 21st Century."

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

Sunday 23

Music Event, 3 p.m., Squires Recital Salon.

Monday 24

Annual Conference on Business Ethics, 5:30 to 6:45 p.m., 100 McBryde: Pat Werhane, UVa.

Horticulture Garden Class, 7 to 9 p.m., Greenhouse complex classroom: Alan McDaniel.

Tuesday 25

Annual Conference on Business Ethics, 7:30 p.m., Burruss auditorium: Gene Fife, retired chairman of Goldman, Sachs International.

Wednesday 26

Annual Conference on Business Ethics, 9 to 10:45 a.m., 364 Wallace; 11 a.m. to 8:15 p.m., DBHCC Auditorium.

YMCA Mornings, 9:30 to 11:30 a.m., Luther Memorial Church.

YMCA Slide Show, noon, Cranwell Center.

Men's Basketball, 7 p.m., Cassell Coliseum: Pittsburgh.

"With Good Reason," 7:30 p.m., WVTF.

Women's Basketball, 7:30 p.m.: At Rutgers.

Thursday 27

Black History Month Event, 6 to 8 p.m., Squires Brush Mountain: The Lost Souls of Black Faculty.

Friday 28

Pay Date for Faculty and Staff Members.

SEMINARS

Friday 21

MCBB, 12:20 to 1:10 p.m., Fralin auditorium: Nick Carpita, Purdue.

Geological Sciences, 3:30 p.m., 4069 Derring: Hallie Sims, Smithsonian National Museum of Natural History.

Saturday 22

Horticulture, 10 a.m. to noon, Greenhouse: Sheri Dorn, Meadowbrook Gardens.

Thursday 27

Geological Sciences, 3:30 p.m., 4069 Derring: Steve Hageman, Appalachian State.

Friday 28

MCBB, 12:20 to 1:10 p.m., Fralin auditorium: Jonathan Dinman, University of Maryland.

BULLETINS

EHSS offers industry-outreach course

Environmental, Health and Safety Services (EHSS) will offer a 10-hour general industry outreach course on February 26 from 9 a.m. to 4 p.m.) and February 28 from 8 a.m. to noon in the EHSS downstairs classroom.

The course is sponsored by OSHA and is designed to give employees an overview of 10 different OSHA topics. The course is for supervisors, lead persons, anyone with designated safety responsibilities, or anyone who would like to know more about OSHA rules and regulations. It is open to any and all employees.

EHSS personnel will be presenting the topics listed below, and the modules are designed to provide a basic awareness of the associated hazards, the most common controls implemented to reduce risk in the workplace, and any policy/procedure specific to Virginia Tech. Participants will receive copies of the OSHA standards covered in class. The class is free to university employees and class size is limited to 11 students. Participants must attend all 10 hours to receive a card from OSHA.

To attend the course, contact Robin Miller at 1-2341 or rmmiller@vt.edu.

Civil War course available on DVD

The on-line course, "Social Aspects of the Civil War," taught by Alumni Distinguished Professor of History James I. Robertson Jr., is now available in DVD.

The short course consists of six audiovisual lectures, interactive on-line discussions hosted by Robertson, and a Civil War trivia game.

Robertson, an award-winning author who appears frequently on public television and hosts a regular Civil War program for public radio, was a historical consultant for the major motion picture *Gods and Generals*, which is based on the novel by Jeff Shaara and is set to be released by Warner Brothers today.

Information on receiving the DVD or taking the course on line is available at <http://www.vto.vt.edu/>.

Employees' scholarships available

Employees' Dependent and Spouse Scholarship Scholar-

ships are available to assist families of Virginia Tech full-time employees in supporting their dependents and spouses as students at Virginia Tech. Scholarships will be equally divided between need- and merit-based awards for freshman or entering transfer students.

To qualify for the scholarship persons must be a dependent or spouse of a salaried full-time staff or faculty members of Virginia Tech, an incoming freshmen or entering transfer student in an undergraduate degree program, and enrolled full time at Virginia Tech.

Apply for the scholarship by submitting the Virginia Tech General Scholarship Application at <http://www.finaid.es.vt.edu/genschol/guide.html>. Dependents or spouses of Virginia Tech employees should check box #86.

Funds to support this scholarship are donated by Virginia Tech employees through the Office of University Development and are administered by the Dependent and Spouse Scholarship Committee. More information is available at <http://www.fst.vt.edu/vtsp>.

FACULTY

Continued from 1

Katherine Allen, professor of human development. The project is sponsored by the Provost's Office, in association with the Center for Multicultural Affairs and the College of Human Sciences and Education.

"Nationally, faculty members of color earn only 16 percent of doctorates, Trower said. They do not receive tenure or appointments to nationally ranked universities at the rate of white professors. "One-third of minority professors are at the rank of lecturer or instructor."

Minority members are subjected to tokenism, according to Trower. They are culturally taxed (minority representatives for committees, student advising, joint professorships, community service). "Target-of-opportunity hires feel stigmatized: 'you only got the job because you're Hispanic,' even when they know they were hired on merit."

Trower said women faculty members are also under-represented, especially in science, mathematics, and engineering and they too are less likely to receive tenure. "Normed against males and trapped by sexual stereotypes, women teach more, serve on more committees, and advise more than men. Women have less time for research and publish less. Yet in sciences, women are cited more often."

Trower's new research shows that early

entries into faculty, men and women, have different values from more senior faculty. The traditional approach favors confidentiality and frank peer reviews; merit which is determined empirically and objectively; survival of the fittest; research as an independent process; publication quantity; and extreme dedication.

Emergent values support transparency because it reveals bias, whim, and cronyism; and recognizes that merit is socially constructed—quantity versus quality—and is subjective and contextual (who are your peers, what is the measurement). Instead of Darwinism, cooperation, collaboration, collegiality, and community should be the normative values.

Research should be centered around a problem, not a discipline and should be collaborative, with a focus on quality, not quantity. The idea that serious scholars chose work over all else should be replaced by an understanding that family and community have value too.

Trower concluded her remarks by reviewing the benefits of diversity: broadening and deepening the pools of talent; students obtaining a head start toward professorship when educated by minority faculty members, increasing innovation where ever diversity exists, solving other problems within the community and institution, maximizing the number of people doing the best work, showing that the institution is fair (who teaches matters), helping to build stronger connections to the

community, and creating a competitive advantage for those universities which are diverse.

Each panelist spoke of commitment to faculty diversity and retention. Roy said, "Arguments against the importance of diversity in education have been shaped by some very clever inversions of terminology. Reverse discrimination; race-neutral programs."

"What is race neutral? To be truly race neutral a program would need to be run by people who are neither pink nor brown. A race of beneficent men perhaps. Blending so well with their surroundings so as to be semi-transparent?"

"Because of their transparency, I call these people water people. They have one calling: to dilute race and all kinds of difference until it doesn't exist. Race neutral reinforces the status quo."

McNamee told the audience "we have to demonstrate that we can create a successful and supportive environment so that a faculty member of color coming here can trust that if issues come up, we have ways to deal with them. If we do that well, we will in fact become a better university."

"As vice provost for graduate studies and Dean of the Graduate School," DePauw said, "I believe that it's absolutely critical that we recruit and retain graduate students of diverse backgrounds. We have to create communities that are inclusive for race, gender, sexual

orientation, ability, national origin, and for other diverse and under-represented individuals."

Davenport recalled looking at his 1964 Virginia Tech yearbook and not finding a single photograph of a black student or faculty member. "As a board member," he said, "I am concerned that we treat all people equally. This includes people of all races and gender. I am concerned that our university hire the best faculty members possible to provide the best experience for our students."

"I think the process of hiring and promoting faculty members must be done in a manner that's driven by principles of this university to seek the best candidate for the job regardless of race, sex or national origin. I really feel like this is our goal and we are making a diligent effort to try to accomplish that."

The panel was asked a number of questions from the approximately 150-member audience. One African-American faculty member asked, "How can we achieve greater stability among faculty members of color? Can we lure senior faculty members here to encourage junior faculty members of color to stay?" And from an African-American graduate student, "What can we do immediately to start changing, starting today? There's a sense of hopelessness for me."

McNamee said in response, "We will not just drop this. I want to debrief with Cathy (Trower). I'm going to focus on a few things we can all get behind. We will publicize what those things are."

ACHIEVERS

Celia Hayhoe, assistant professor, apparel, housing, and resource management, has received the Epsilon Sigma Phi Program Achievement (Category IV) First Place Award for a co-developed high-school financial-planning program and the Program Achievement Award First Place National Initiative (Category VI) for a high-school financial-planning web site. Also, the Kentucky Association of State Extension Professionals presented Hayhoe with an Outstanding Program award for the high-school financial-planning web site. Additionally, Hayhoe and a colleague from Rutgers University received a J.P. Morgan Chase Foundation Grant for their proposal titled "Financial Literacy Using Newspapers in Education." **Melissa Chase**, assistant professor in apparel, housing, and resource management, is the project associate.

Sherry Schofield-Tomschin, assistant professor of apparel, housing, and resource management, has received a "Certificate of Teaching Excellence Award" from the College of Human Sciences and Education.

Julia Beamish, professor, **Rosemary Goss**, professor, and **JoAnn Emmel**, assistant professor of apparel, housing, and resource management, had their article "Lifestyle influences on housing preferences" published in the journal *Housing and Society*.

Katherine Parrott, professor in apparel, housing, and resource management, co-authored the paper "Home environments and allergen avoidance practices of female allergic patients" which was published in the *Proceedings of the Thai Society of Gerontology and the Geriatric Medicine* by the Thai Society of Gerontology and Geriatric Medicine.

LuAnn Gaskill, professor and department chair of apparel, housing, and resource management, served as a research-session discussion-panel member and as a session chair at the United States Association of Small Business and Entrepreneurship Conference in Hilton Head, South Carolina, in January.

Marshall White, professor of wood science and forest products, spoke at the National Wooden Pallet and Container Association (NWPCA) Recycling and Repair Conference, held in October in Charlotte, N.C. He spoke on the latest version of pallet-design systems (PDS), which features a model for predicting the performance of remanufactured pallets and combo pallets. White's International Pallet Testing Project convened working groups at the International Pallet Standards Meetings held in October in Orlando, Fla.

The Australian National University in Canberra and the University of Melbourne recently invited **Bob Smith**, associate professor and director of the Center for Forest Products Marketing and Management, to talk about the forest-products marketing-education and research program at Virginia Tech. Posed to double its wood output by the end of this decade, Australia is investigating possible options for developing its own forest-products marketing-research and education program.

Smith, a Fulbright senior specialist candidate, has given presentations and been involved with projects in Chile, England, Germany, Russia, Mexico, Canada, Australia, Malaysia, Finland and the United States.

In her recently published book, *Soulstepping: African American Step Shows*, **Professor Elizabeth Fine** documents the

history of stepping. Her book is the first to explore the history of stepping and its place as a ritual dance of identity and African heritage.

In *Soulstepping*, Fine explains the process of creating and negotiating identity through stepping, probes the intersections of verbal and non-verbal performances and addresses issues of cultural politics.

Samuel R. Cook, coordinator of the American Indian Studies Program, has recently received two distinctions from anthropological associations. Cook has been awarded fellow status in the Society for Applied Anthropology. His book, *Monacans and Miners: Native American and Coal Mining Communities in Appalachia*, has received the Mooney award.

The Mooney award is given annually by the Southern Anthropological Society for the best book published in the past two years on a theme in southern anthropology or ethnohistory. Cook's *Monacans and Miners* compares the political, economic and social experiences of the indigenous Monacan people of Amherst County to the Scottish and Irish settlers of Wyoming County, W.Va. in the late 18th century.

Bruce Wallace, geneticist and distinguished professor emeritus of biology, has had four of his published books translated into Portuguese in Brazil.

The Environment: As I See it, Science is Not Enough and *The Environment 2: As I See it, the Mold Must Be Broken* are books each compiled of about 100 essays. The essays in *The Environment* discuss science, government, academia, and current events. *The Environment 2* consists of an overview of environmental concerns, and a variety of solutions to these environmental problems. These books have received

excellent reviews from *The Quarterly Review of Biology* and *The Roanoke Times*.

The Study of Gene Action, which was published with Joseph Falkinham, and *The Search for the Gene* were also published and translated into Portuguese.

Michael Olsen, professor of hospitality and tourism management, has been appointed a member of the International Hotel Investment Council.

The 18-member council provides a forum for the discussion of issues in investment in the hotel industry. It awards research grants to senior academics and seeks to promote industry-wide positions on relevant issues. Olsen, who specializes in strategic management in the hospitality industry, is one of the two academic members on the council.

Every two years, members of the academic community are recognized for educational excellence by being named to *Who's Who Among America's Teachers*. The following faculty members from have been chosen by the community as the most influential educators: **Harold Eugene Burkhart**, Department of Forestry; **David E. Clark**, Department of Materials Engineering; **D. Michael Denbow**, Department of Animal and Poultry Science; **E. Scott Geller**, Department of Psychology; **Mark Gifford**, Department of Philosophy; **Edmund G. Henneke II**, Department of Engineering; **Abigail Waters Kohler**, Department of Mathematics; **David Martin McKee**, Department of Music; **Kent Nakamoto**, Department of Marketing; **George M. Simmons Jr.**, Department of Biology; **Larry Thomas Taylor**, Department of Chemistry; and **Brenda Sophia Jacqueline Winkel**, Department of Biology.

EMPLOYMENT

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.

CLASSIFIED POSITIONS

FULL TIME

One full-time food-service position available.
Associate Director of Culinary Services, 002947H, PB 5, RDP.
Assistant Director of Budget Operations/E&G Budget Manager, 001951F, PB 5, BFP.
Database Administrator, 007433G, PB 6,

IS&C TS/DBMS.

Desktop Support Administrator, 008062S, PB 3, University Development.

Electrician, 001691F, PB 3, Physical Plant.

Electrician Supervisor, 002038F, PB 4, Facilities, Electric Services.

Housekeeping Worker, P002005C, PB 1, Physical Plant.

HVAC Technician, 008001H, PB 3, RDP.

Key Control/Office Specialist, 001670H, PB 2, RDP.

Lab Specialist Senior, 007743M, PB 4, PPWS.

Medical Technologist, 006771M, PB 4, VTH.

Medical Technologist, 002666M, PB 4, VTH.

Office Services Specialist, 003080B, PB 2, ISE.

Powerline Assistant, 006523F, PB 3, Facilities, Electric Services.

Powerline Worker, 000030F, PB 3, Facilities.

Program Support Tech, 006746Y, PB 3, EHSS.

Unit Manager, 007961H, PB 5, RDP.

PART TIME

ICU Veterinary Technologist Large Animal, W022218M, PB 2, VTH.

Programmer (SAS), W023511F, PB 4, University Controller.

Receptionist/Office Assistant, W023523K, PB 2, VBI.

Small Animal ICU Technician, W020101M, PB 4, VTH.

Starter Marshall/Shop Attendant, W022113J, PB 1, Golf Clubhouse.

OFF CAMPUS

Nursing Shift Supervisor, 002996M, PB 2, Equine Medical Center.

FACULTY POSITIONS

INSTRUCTIONAL

Center for Interdisciplinary Studies, Assistant Professor, Contact: Director, Black Studies Program, College of Arts/Sciences, 0227.

College of Veterinary Medicine, Clinical Instructor of Large Animal Surgery. Contact: Craig D. Thatcher, VMRCVM, 0442.

Department of Computer Science, Assistant Professor (Human-Computer Interaction). Contact: HCI Faculty Search, 660 McBryde Hall.

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VTTI researchers looking at single wide-base truck tires

By Ennis McCrery

Pavement researchers at the Virginia Tech Transportation Institute (VTTI) are examining the use of cost-effective single wide-base tires in place of dual tires on big rigs.

Sponsored by a grant from the Michelin Americas Research and Development Corporation, the research uses field-test data and computer simulation to address the concerns of U.S. pavement engineers that wide-base tires may cause a significant increase in pavement damage on roadways. Pavement deterioration presents serious economic, safety, and traffic concerns. The American Society of Civil Engineers estimates that \$1.3 trillion is needed to repair the nation's infrastructure over the next five years.

"People were really interested in our results," said Imad Al-Qadi, Charles E. Via Jr. professor of civil and environmental engineering and leader of VTTI's Roadway Infrastructure Group. Wide-base tires offer many economic and safety benefits for the trucking and transportation industries, including improved fuel consumption, saving as much as 1,000 gallons of fuel per year in a typical tractor-trailer; increased pay load; increased driver comfort; improved handling and braking; lessened repairs; and reduced tire costs.

Michelin first approached VTTI's Roadway Infrastructure Group in 2001 to measure the pavement damage caused by wide-base and dual tires. Researchers tested a new wide-base tire developed by Michelin to lessen pavement damage. Previous generations of wide-base tires caused concerns because of their size, shape, and high pressure levels. The new tire offers a wider, flatter footprint; uses a stronger, crown-belt tire wall; and operates at the same tire pressure as dual tires.

Pavement researchers at VTTI tested tires under different loading and environmental conditions and at different speeds and tire

pressures to fully understand the pavement's response to both kinds of tires. The tests were performed on the Virginia Department of Transportation's Smart Road, which includes 12 different pavement test sections designed and instrumented by the Roadway Infrastructure Group. These sections contain embedded sensors to measure strains, stresses, frost depth, moisture, and temperature.

The tests showed that the wide-base tires induced approximately the same damage as the equivalent dual tires. In addition, researchers determined that the largest contributing factor to pavement damage is the axle load, or weight carried by the truck's axles, rather than the tire pressure, as was originally believed. Tire pressure was only found to be a factor at shallow depths.

Based on these results, VTTI received another grant from Michelin to develop computer-simulated models that can determine the effects of wide-base tires on any roadway in the world. Starting in January, researchers began using a computer-based technique called Finite Element Analysis (FEA) to create simulated pavement models that allow them to predict pavement response and damage from moving tires.

These models provide similar pavement responses to those measured during testing on the Smart Road; however, researchers can "change the effect of the environment and loading as well as the properties of the pavement system to look at any different loading and materials used," Al-Qadi said. The models are significant because they are based on real-world, rather than hypothetical, information. "People usually develop a theory and then test. We wanted to see first if this would work before we develop the model," Al-Qadi said.

VTTI's research has increased national and international interest in wide-base tires, and many engineers and trucking professionals are considering making the switch.

is described as the rise of individualism. Dr. Kiecolt's findings show that our worries about women abandoning their families for the workplace are needless. Although home is a location in which much unpaid work is expected of women, it remains for them their primary source of pleasure and satisfaction."

"This does not mean that more and more women would rather stay home than work," Kiecolt said. "They just find their work is their work and their home is their haven."

RESEARCHER

Continued from 1

hours worked, Kiecolt speculates that it is implied in the workplace that people will work longer hours—that it is part of our work culture.

Men have not changed much in their satisfaction with work and family life, but women apparently are not finding the workplace rewarding enough to increase their satisfaction over time, Kiecolt said. Instead, more women are finding home a haven. The study indicates that many long-standing work and family problems such as responsibilities, time management, and work opportunities, remain unsolved. Perhaps surprisingly, though, men and women with children under the age of six are especially likely to find home a haven.

"Children may make family life more satisfying, boosting parents' sense of meaning and purpose," Kiecolt said.

Alexis Walker, editor of the *Journal of Marriage and Family* (JMF), which published Kiecolt's study in its current issue, said, "This research is significant because it addresses an underlying assumption in the contemporary debate about families. Previous researchers had assumed that women in particular are looking for ways to get away from their household and family obligations so they can focus on their own self-interests. This phenomenon

Report ranks home affordability by regions

By Sarah Newbill

A recent report compiled by the Virginia Tech Center for Housing Research and the Virginia Association of REALTORS® concludes that home ownership is affordable to the average family in most areas of Virginia.

The report divides Virginia into housing-market regions and measures each on affordability, or ownership cost burden, based on the percent of income required for the principal and interest payment for owner-occupied housing. Areas where the average housing price requires less than 25 percent of the median family income are considered affordable, and areas where the average price requires 25 percent or more of the median family income are considered unaffordable to the average family.

In 2002, the five most-affordable regions compared with other market areas in the state for home ownership were Southside (10.4 percent), Martinsville (12.8 percent), Dan River (14.4 percent), Richmond (15.0 percent), and South Central (15.5 percent).

Only the top two of the five least-affordable regions listed below had ownership costs considered unaffordable (but just barely so) for the average family in that area. The regions were Lexington (25.8 percent), Greater Piedmont (25.1 percent), Chesapeake Bay and Rivers (23.1 percent), Fairfax-Northern Virginia (22.4 percent), and Williamsburg (20.7 percent).

The rankings above are from the perspective of the affordability of home ownership to the average family within the designated market area—in other words, the affordability of Southside to Southsiders. Another perspective is the affordability of the market area to the average family in Virginia as

a whole. From this perspective, four regions face serious affordability concerns if the average Virginia family were to move there. The regions were Fairfax-Northern Virginia, Dulles, Greater Piedmont, and Williamsburg.

The percentage of average median family income required to purchase a house in Virginia in 2002 was 18 percent, just below the national average of 18.6 percent. This is down over a point from 19.1 percent in the previous year.

Overall, Virginia is a good area for homeowners, said Ted Koebel, director for the Virginia Center for Housing Research, but he is quick to point out that affordability is a serious concern in some areas. "Virginia as a whole fares well in comparison with the nation in terms of homeowner affordability. However, steep increases in housing prices in northern Virginia have made that a less affordable region, particularly for anyone moving there from elsewhere in Virginia."

Koebel also said the search for affordable housing in northern Virginia makes the lower costs in adjacent rural counties and small towns very attractive, prompting a 'leap-frog' effect. "Leap-frog development solves an affordability problem for people living in or moving to northern Virginia, but it often creates an affordability problem for residents living in the more rural outlying communities, causing their land and housing prices to increase. We have to plan for an adequate housing supply within a reasonable distance of jobs. That should be a key test to determine if growth planning is truly 'smart.'"

The full report can be downloaded at the VCHR web site at <http://www.caus.vt.edu/CAUS/RESEARCH/vchr/VCHR.html>. For more information, contact Koebel at 1-3993.

PETERS

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and operating contract for the U.S. Department of Energy's Oak Ridge National Laboratory.

"Now we look forward to strengthened ties with the Pacific Northwest National Laboratory and with the Department of Energy," Steger said, "and we wish Dr. Peters continued success."

Peters said, "PNNL is an outstanding scientific organization doing excellent research in energy and environment and other areas important to our nation's science and technology agenda. I am looking forward to the associations and contributions I will be able to make to the laboratory and to the community

as we collectively work to meet important DOE missions."

As dean of the Graduate School, he expanded tuition-remission scholarships for graduate students, increased course offerings to part-time students by increasing resources to departments offering off-campus programs, and supported a Graduate School, computer science, and library collaboration to create the electronic theses and dissertation (ETD) project, which became an international model. The Graduate School was split from the Research Division in 2001.

In addition, Peters is president of Virginia Tech Intellectual Properties Inc. and serves on the boards of the Virginia Tech Corporate Research Center and the venture capital partnership, Triad Investors Inc.

HUD

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report is due out this summer.

This project is one of several that the Center for Housing Research is conducting for HUD under a multi-year contract to provide research on Affordable Housing and Building Technology. Other recent projects include an investigation of residential construction information mechanisms and procedures, a national survey of homebuilders on their use of innovative residential technologies, an international review of housing-technology research, and the national evaluation of the Elderly Cottage Housing Opportunity (ECHO) program. The center's director, Ted Koebel, was also selected by HUD to recommend improvements in the department's Worst Case Housing Needs Report to Congress.