



PULSE

PHILANTHROPY in ACTION at the
UNIVERSITY of VIRGINIA HEALTH SYSTEM



Nationally renowned researchers Drs. Steven DeKosky (right) and John Lazo are part of a multi-disciplinary team at UVA looking to uncover the mysteries behind Alzheimer's disease.

New Early Interventions May Yield Breakthroughs in Alzheimer's Care

As a healthcare fund manager, Ed Owens (A&S '68) was quick to recognize that providing for the nation's growing number of Alzheimer's patients was largely an unmet need.

The most common cause of dementia in the elderly, the disease currently affects 5.2 million Americans and their families—and that number is rising rapidly. At the same time, while there are treatments to reduce the symptoms of the disease, there are no medications that provide significant, long-term help to patients, a fact that Owens knew only all too well.

“Professionally, I could see there were real problems with the number of people who would be diagnosed in their lifetimes,” he explains. “Personally, I watched my mother pass away from the disease. I knew how tremendously difficult Alzheimer's is on families.”

A long-time supporter of UVA's Jefferson Scholars Program, Owens wanted to make a contribution to the sciences at the University. In 2007, he found his chance.

On a trip back to UVA, Owens met George Bloom, PhD, professor of biology in the College of Arts & Sciences. Bloom had just published a paper linking the actions of two proteins, tau and beta-amyloid, closely associated with the plaques and tangles seen in Alzheimer's brains. Researchers had conflicting views as to which protein was more important in the genesis of the disease. Bloom showed that the toxicity of tau was initiated by beta-amyloid, an important step in establishing the pathway by which memory loss occurs in Alzheimer's. This interaction

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Breaking Ground on the Battle Building at UVA Children's Hospital

For those who cherished a vision of an expanded UVA Children's Hospital for more than 30 years, it was a long time coming. On a construction site decorated with toy shovels, dump trucks, and brightly colored polka dots, the University of Virginia broke ground June 9th for the Battle Building at UVA Children's Hospital, the Health System's newest clinical care facility.

"Today, this space is filled with earth-moving machinery, but, in three short years, the Battle Building will rise from this space," said R. Edward Howell, vice president and CEO of the UVA Medical Center. "Inside, the Battle Building will be filled with families and with children—from toddlers to teens, in strollers and in wheelchairs, some laughing and some quietly watchful, all coming here to find the unique care and comfort that they need."

The 200,000-square-foot complex will centralize outpatient care for children. When the Battle Building opens in 2014, these children will be able to get the services they need in one convenient, family-friendly location, with accessible parking and patient drop-off areas. The facility will offer general care, as well as pediatric specialist care in cancer, heart disorders, diabetes, and many other illnesses.



In June, the University broke ground on the Battle Building at UVA Children's Hospital.

Approximately \$9 million in support is still needed for the project. To learn more about the Battle Building, please visit <http://uvachildrens.org>. You may also contact Kaye Forsman, director of development, UVA Children's Hospital, at (800) 297-0102, or by e-mail at kcforsman@virginia.edu.



UVA Children's Hospital benefactors Barry and Bobby Battle



Moving Forward, New Directions

For the last seven years, the Campaign for Health has focused on raising philanthropic support for strategic priorities, many of which have been celebrated in this publication. We continue to target several important initiatives, such as the completion of the Battle Building at UVA Children's Hospital and the renovation of McLeod Hall, while ensuring that our core missions of education, research, and clinical care are supported as well.

As the Health System completes a comprehensive strategic planning effort, we also are beginning to integrate new and emerging priorities into our list of fund-raising needs. These new priorities, which focus on clinical research and programs of excellence, will be shaped in the coming months. We look forward to sharing more information on them with you in an upcoming issue of PULSE.

Our overarching goal remains the same: to ensure that the UVA Health System has the resources necessary to provide excellence, innovation, and superlative quality in the care of patients, the training of health professionals, and the creation and sharing of health knowledge. Thank you for your continued partnership and support of this effort and for your commitment to healthcare excellence at the University of Virginia.

Karen B. Rendleman
Executive Director, UVA Health Foundation
Associate Vice President, UVA Health System Development

Giving from the Heart

Physician Adds to Her Lifetime of Contributions to Pediatric Cardiology

Take a look around the UVA Health System, and you can see the impact left by pediatric cardiologist Martha Carpenter, MD, on the institution. Carpenter helped establish UVA's pediatric congenital heart disease clinic, cardiac catheterization lab, and field clinics around the state. And she taught hundreds of medical students and cared for thousands of children with heart problems.

"Her contributions to the children in the state with heart disease have been nothing short of phenomenal," says Paul Matherne, MD, vice chair, clinical strategy and program development and division head, pediatric cardiology. "She has given a tremendous amount to this institution through her hard work and strong work ethic. She has been a tireless advocate for her patients and an amazing role model for all physicians."

Carpenter recently made another pivotal contribution—a gift to support cardiac clinic space within the new Battle Building at UVA Children's Hospital.



Pediatric cardiologist Dr. Martha Carpenter

A Career of Change

Earning her medical degree from UVA in 1959, Carpenter was one of only four women in her class. She went on to complete an internship at UVA and residency and fellowship in the young subspecialty of pediatric cardiology at Boston Children's Hospital. She happily returned to practice at UVA, despite a competing offer from Harvard.

Carpenter has been at UVA ever since, practicing pediatric medicine for 50 years with a personal, caring touch. Today, Carpenter still sees children in the UVA clinic twice a month or even weekly, continues to teach, and occasionally visits cardiology outreach clinics around Virginia that she established.

"I've seen a lot of change," Carpenter recalls. "Back when I started, we didn't have as much to offer children with heart defects. There were no echocardiograms or other truly effective tools for heart imaging. We used what we had, starting with a physical exam and stethoscope. That was followed, if needed, with an electrocardiogram and chest films. Only as a final step did we take a child to the cath lab for a definitive diagnosis."

Because of those early deficiencies, Carpenter and her contemporaries became masters at interpreting heart sounds. Even with all the high-tech equipment available today, Carpenter is legendary among her colleagues for her "ear" that she uses to diagnose heart problems.

Still Looking Forward

While much has changed in children's cardiology, Carpenter still has ideas for improving the future. She is excited about the new Battle Building at UVA Children's Hospital, designed to consolidate pediatric outpatient care. Her significant bequest gift through her retirement plan will provide essential funding for cardiac clinic space that offers comprehensive services in a central location with a family-friendly design.

"Medicine is moving more toward an outpatient model," Carpenter notes, "and the clinic space is much needed. So is a soothing environment. Kids can be anxious when they come to the clinic, and we need to make them as comfortable as possible."

She should know. After all, caring about the next generation of children with heart problems has always come naturally to Carpenter.

Building Stronger Relationships Between Professor and Student

New fund will support mentorship and collaboration

"I was an unusual student," remembers David Goodman, PhD (Grad A&S '93), CEO of Pharmascience, Inc., a private, family-owned pharmaceutical company in Montreal, Canada. "One man—Professor Peter C. Isakson—took a chance and admitted me into his laboratory research program without any prior experience."

Two decades later, it's precisely the mentoring he received from Isakson and the excellence of the UVA Department of Pharmacology that energizes Goodman's interest in giving back. Earlier this year Goodman committed \$50,000 to the Department of Pharmacology to fund the Peter C. Isakson Mentorship Award.



UVA graduate David Goodman wants to strengthen the relationship between student researchers and their mentors.

"UVA gave me my first opportunity by letting me in the door and taking a chance on an inexperienced student," says Goodman, who credits Isakson with "teaching me the fundamentals and putting me on track."

To show his gratitude and support for basic research, Goodman decided to set an example.

"The Peter C. Isakson Mentorship Award is a student award for one to two students a year that cultivates promise as well as the connection

between students and devoted assistant and associate professors demonstrating strong mentoring skills. I am hoping to recognize strong teachers and students and provide them a unique experience," says Goodman.

According to James C. Garrison, PhD, professor of pharmacology, "This award formalizes what our faculty already does well—guiding students and



The Isakson Award helped student researcher Jessica Geisler, pictured here with her mentor Chien Li, PhD, continue her research into possible new treatments for diabetes.

imparting a philosophy that demonstrates what 'good' science really means."

Douglas Bayliss, PhD, chair of the department, agrees. He believes that the award's real uniqueness lies in how it will "enhance our graduate students' experience at a very formative period in their lives."

"Graduate school is the time when we want to present students with the most ethical, exciting training possible," he explains. "We want to cultivate an education for scientific researchers that will serve them well and provide concrete experiences."

The Isakson award provides faculty who might not have access to grant resources and other financial backing the ability to advance their students' unique research experiences. This year, the inaugural award went to Chien Li, PhD, an assistant professor of pharmacology, and allowed his student, Jessica Geisler, to visit a laboratory in Dallas and add new and exciting techniques to her research.

Recognizing Talent

An endowed prize or award allows the University, or any individual school or department, to acknowledge outstanding performances by students, faculty, or other members of the UVA community. Prizes or awards established with a gift of \$50,000 or more may be named by the donor.

For more information on setting up an award, call the UVA Health Foundation at (800) 297-0102 or (434) 924-8432.

When Nurses and Doctors Share Training, Patients Benefit

Excellent clinical care is complex. It requires many individuals with different training and perspectives to come together to care for patients. By teaching nurses and doctors how to effectively communicate with each other—educational experts believe—medical errors could be reduced and patient outcomes improved.

The training for this collaborative effort is known as Interprofessional Education (IPE) or team-based learning. In 2009, the approach was woven into the medical and nursing curricula at UVA, with strong support from School of Nursing Dean Dorrie K. Fontaine, RN, PhD, FAAN, and Vice President and School of Medicine Dean Steven T. DeKosky, MD, FAAN, FACP.

Initial IPE programs in UVA's nursing and medical schools have focused on cultivating shared knowledge and attitudes through coursework, clinical training, and community service projects. These efforts emphasized an understanding of the respective roles of nurses and physicians and the importance of building mutual trust and respect.

UVA's approach—and plans for the future—have received generous support from the Josiah Macy Jr. Foundation, a national foundation that focuses on advancing education for health professionals. To further establish these pioneering IPE initiatives, the Macy Foundation recently awarded UVA's Schools of Nursing and Medicine a \$746,000 grant.

"New nurses and physicians will find themselves in many complex settings," explains Fontaine. "With this grant from the Macy Foundation, UVA is well positioned to transform our program and create new best practice models and assessment methods that will, ultimately, lead to better care for patients here and elsewhere."

Putting students in real-world situations

IPE integrates specific healthcare principles into the learning and combines them with real-world medical circumstances. With funding from Macy, faculty will develop simulated clinical cases that will engage students, preparing them to work together to give their patient every treatment advantage.

UVA's experts will then develop measurable best practices that can be taught and reinforced in student interactions.

As important, the assessment tools developed by professors are used to measure IPE's overall effectiveness, creating ongoing refinements in reliable education models that are shared with other nursing and medical schools around the country.

George E. Thibault, president of the Macy Foundation, believes that the measurable science supporting IPE makes it well worth the investment. "We have good evidence that healthcare delivered in teams is more efficient and leads to better outcomes for patients," Thibault notes. "By providing opportunities for students from different health professions to work together in classroom and clinical settings, we can build a foundation for team-based care and put practitioners on a path to working together in a way that we know leads to higher quality care, reduces medical errors and meets the public's needs."



School of Nursing Dean Dorrie Fontaine is helping lead the charge of interprofessional education at UVA.



Valentina Brashers, John Owen, Jeanne Erickson, and Leslie Blackhall will use the Macy grant to expand and assess interprofessional education opportunities at UVA.

leads to the destruction of nerve cells, which accounts for the loss of memory and cognitive skills that characterize the disease.

“I knew this discovery could open the way for potential new treatments for Alzheimer’s,” Owens remembers. “I wanted to help advance George’s work and show the University how important this research was.”

Owens’ subsequent three-year grant gave Bloom the resources to continue his work, and the gift was later leveraged into further funding from private foundations and a \$1 million grant from the NIH.

Innovative Leaders, State-of-the-Art Technology

UVA already possessed a small, but excellent, clinical program in Alzheimer’s and fostered innovative research into the disease. But when Vice President and Dean of the School of Medicine Steven T. DeKosky, MD, FAAN, FACP, arrived in 2008, he set the University on an aggressive pursuit of new treatments for Alzheimer’s. His pioneering work into novel neuroimaging techniques had proved that PET imaging (nuclear medicine imaging that produces a three-dimensional image) would allow researchers to reliably visualize and measure brain changes in those with very early stage Alzheimer’s.

Now DeKosky and the team that is coalescing at UVA will expand the use of PET imaging through the development of new, more flexible compounds. Developing new tracers and neuroimaging markers that can bind to and illuminate affected areas of the brain will lead to earlier and improved diagnosis of the disease. UVA has invested heavily in clinical neuroimaging equipment, including a cyclotron and PET scanner, which will be available to researchers. These tools will allow researchers to more quickly measure the usefulness of new treatments and also to identify new targets for drug development.

“These techniques and tools can allow doctors to accurately measure changes in the brain over a period of time,” explains DeKosky, “even before a patient is showing outward signs of disordered thinking. Earlier diagnosis gives doctors more opportunities to change the progression of a person’s disease before significant deficits have occurred, positively impacting the quality of life for those patients and their families.”

Expanding Our Reach

Owens’ initial gift advanced Bloom’s basic science research at a key point in the scientific process. His most recent gift helps John Lazo, PhD, associate dean for basic research in the School of Medicine, apply his expertise to the challenges of Alzheimer’s. Lazo and Bloom are now



A meeting between biologist George Bloom (left) and UVA alum Ed Owens led to a generous gift that has dramatically advanced Alzheimer’s disease research at UVA.

applying novel screening strategies to pave the way for possible new treatments for patients.

Owens’ gifts will also help UVA recruit a top-tier Alzheimer’s researcher who will focus on the cascade of events that links traumatic brain injury (TBI) to the later development of Alzheimer’s. Identifying and understanding the sequence of changes in brain chemistry that occur after TBI should help scientists determine how those changes trigger future memory and cognitive problems, and hopefully lead to protective therapies.

“Recruiting and retaining world-class scientists is vital to our efforts in developing new treatments,” explains DeKosky. “We’ve been fortunate to have several individuals who believe in our ability to discover the inner workings of Alzheimer’s and develop new treatments. Our benefactors’ support accelerates this work.” In addition to Owens, leadership support from the Harrison Family Foundation and Nan Stuart—who is continuing the philanthropic work of her late father E. Hadley Stewart (A&S '41)—have advanced research on a number of fronts.

By slowing or stopping the progression of Alzheimer’s—even by several years—many patients may be able to live out their natural lives unencumbered by the disease. The partnership between UVA’s researchers and generous benefactors may well increase our understanding of the disease, and give us the power to one day defeat it.

To learn more about UVA’s Alzheimer’s disease research program, contact Cindy Reynolds, director of development, neurological programs, at 800-297-0102 or by e-mail at creynolds@virginia.edu.

Smart Medicine

UVA Cancer Center Attacks Pancreatic Cancer in New Ways

Biomedical engineer Kim Kelly, PhD, is determined to improve the odds for pancreatic patients.

Despite 30 years of tremendous progress in treating other forms of cancer, the five-year survival rate for pancreatic cancer remains below six percent.

"Pancreatic cancer, by the time it's detected, is almost always metastatic, meaning it has spread to other parts of the body," explains Kelly. Her goal: to find a way to reliably diagnose pancreatic cancer earlier.

Kelly is developing a new detection method that can locate cancerous pancreatic cells before they metastasize, greatly improving treatment options and outcomes for patients. She has identified a peptide that effectively binds with pancreatic tumors, but not with noncancerous cells, allowing researchers to illuminate and view dangerous pre-cancerous lesions the size of sesame seeds. The potential result: lesions can be surgically removed before the patient even gets cancer.

Kelly is also collaborating with UVA microbiologist Tom Parsons, PhD, and surgeon-scientist Todd Bauer, MD, on a different, but equally promising, method of early detection for pancreatic cancer. In the coming months, new clinical trials will be underway at UVA to test the team's breakthrough discovery—a biomarker that can be measured in the blood, indicating the presence of specific cancer cells implicated in more than 90 percent of pancreatic tumors.

Bold Steps Forward

Such pioneering approaches to pancreatic cancer research help define UVA's new **Pancreatic Cancer Care and Research Program**. The program brings together talented individuals from across the Health System—like Kelly, Bauer, and Parsons, as well as oncologist Hanna Sanoff, MD—to provide the highest-quality care to patients. Such collaborations accelerate the process, speeding the development of new treatment options for patients. Based on discoveries made in the Bauer-Parsons lab, a clinical trial using a new drug combination that targets the molecular mechanisms driving pancreatic cancer growth and metastases has recently opened to patients.

"Our ultimate goal is to provide pancreatic cancer patients with comprehensive care," explains Reid Adams, MD, surgical oncologist and program director. "By bringing together expert talent, we can integrate outstanding clinical care with novel approaches to detection, treatment, and prevention—approaches based primarily on research discoveries made in UVA laboratories that already directly benefit our patients."

The program will assemble a robust selection of clinical trials to treat patients based on their individual tumor characteristics, tailoring treatment approaches to each person's pancreatic cancer type. Efforts are also underway for the planned launch of the High-Risk Pancreatic Cancer Clinic, set to enhance the early detection of pancreatic cancer, even in patients who don't yet have the fully developed disease.

Over the next five years the Pancreatic Cancer Care and Research Program will marshal vital resources to quickly translate basic science discoveries into new treatments that will offer hope and time to patients and their families.



Researcher Kim Kelly is searching for ways to improve the odds for pancreatic cancer patients.

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In the News

UVA Health System Physicians and Specialties Recognized

Sixty-seven physicians from the University of Virginia Health System appear in the first "Top Doctors" directory issued by *U.S. News & World Report*. Of the 67 UVA doctors selected, 48 are among the top one percent in the nation in their respective fields. UVA Medical Center ranked first among hospitals in Central Virginia by a vast margin for the number of top doctors—no other institution in the region had more than one physician listed.

Meanwhile, five medical specialties at UVA are also ranked among the top in their field in *U.S. News & World Report's* annual "Best Hospitals" guide. UVA specialties ranked in the 2011-2012 guide are: diabetes and endocrinology (13); neurology and neurosurgery (35); ear, nose, and throat (39); gynecology (44); and cancer (48).



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