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VanderbiltMedicine

WINTER 2010



The Possibilities of
Personalized Medicine

Critical Acclaim

The new Critical Care Tower, which houses the medical, surgical and neurological intensive care units and 12 new operating rooms, opened Nov. 14. The central atrium features skylights to bring in sunshine. See story on page 7.



SUSAN URMY

Vanderbilt **Medicine**

VOLUME 27, NUMBER 1

Vanderbilt Medicine is published by Vanderbilt University Medical Center in cooperation with the VUMC Office of News and Communications.

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Vanderbilt is poised to help usher in a new age in biomedicine and health care, one which will move away from medical practice aimed at the average patient toward care targeted at individuals' unique characteristics.



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FACULTY PROFILE 8

BY JEFF BALSER, M.D., PH.D.
Vice Chancellor for Health Affairs



JOE HOWELL

These are surely the most exciting times in the history of medicine. Advances abound in broad areas of basic science, from stem cell biology and nanotechnology, to gene sequencing, drug and biomarker identification. Concurrently, a wide range of disciplines – from information and computational science to ethics, epidemiology and systems engineering – are engaging in areas of biomedicine that are essential to translating discovery to practice, to make clinical care far more safe and effective.

We are on the threshold of a golden age in biomedical science.

Vanderbilt is poised to usher in that golden age. Our aim over the next decade is to do far more than meaningfully participate. An unparalleled portfolio of resources and programs, laced through an atmosphere of collaboration uncommon in large research universities, is propelling us to the forefront of biomedical science and health care.

At Vanderbilt, standing in the center of this whirlwind of innovation will be the patient – the “person” in personalized medicine.

This issue of *Vanderbilt Medicine* is devoted to examining personalized medicine from every angle: what it means to individual patients, how this emphasis on

the patient will change medical education, and how we will approach diagnosis and discovery in this new era.

My thoughts about this are straightforward: the next age of biomedicine will move away from an era where the “best” medical practice is aimed at the “average” patient; instead, care will be targeted at the unique characteristics of individuals, from their genetic makeup to their cultural background. No longer will we deliver the “best” chemotherapy to a large population, reluctantly accepting that “best” means we only shrink tumors one-third of the time; rather, each tumor will be assaulted with a cocktail specifically designed to its unique molecular characteristics. And ironically, it is now clear that true individualized care cannot be accomplished by single providers working in isolation; rather, the vast array of social, cultural and molecular dimensions underpinning care tailored to an individual requires a “system of care” that leverages the integrated expertise of many professionals and specialized resources, all supported by point-of-care decision support, and all working as a team dedicated to optimizing the individual patient experience.

Why Vanderbilt? Many of the world’s great medical centers are making discoveries every day that expand our library of understanding, enabling individualized care. But only a small number of institutions are positioned to lead the transformation.

- Only a handful of the nation’s academic medical centers are governed, and therefore function, as a fully integrated system in all dimensions – clinical care, research and education.

- Even fewer are fully integrated with one of the world’s great universities. Even fewer still are co-located on the same campus. Chemistry and physics, law and ethics, special education and psychology – these and many more disciplines that “grew up” outside of medical centers will be central to personalizing health care.

- Less than 2 percent of America’s hospitals have comprehensive health care information technology – systems that not only document, but support decision-

making. Our system does, and is supported by the country’s largest biomedical informatics faculty. As such, Vanderbilt’s opportunity to leverage information in all areas of biomedical science – from basic discovery to systems-based care – is without peer.

- Vanderbilt’s biomedical discovery enterprise is among the nation’s 10 largest NIH-funded programs, with critical mass that allows meaningful inquiry at the disease interface for the majority of our patients. Almost 25 percent of the Medical Center – 5,000 individuals – primarily focus on research. And all 10 schools of the University have faculty engaged in health and biomedicine.

What compels us? The stakes in making progress are enormous, not just for Vanderbilt, but for our patients, our region, and even our world.

For example, adverse drug events cause more than 100,000 deaths per year in the United States and are the fifth leading cause of death among hospital patients. Nearly all are preventable through improvements in systems-based care and a better understanding of individual genetic, behavioral and social risk.

Finally, as we create ever-more sophisticated systems and technology to revolutionize and individualize care, we must never forget our most valuable asset – our culture, built over our 120-year history. The Vanderbilt culture cares deeply about its community, its colleagues and its patients. It models empathy while mentoring the next generation of teachers, scientists and caregivers. Ironically, the essential ingredient of modern personalized medicine – care for the individual – draws inexorably from our oldest principles. These core values compel our approach to science and health care in a way that expresses the best of who we are, and forges our commitment to creating a better world – for our loved ones, our colleagues, our local community and all of humanity. **VM**

Vanderbilt joins cardiac stem cell consortium

Vanderbilt will receive about \$1.2 million a year to study cardiac stem cells whose biological properties are poorly understood and investigate how disease affects their usefulness for therapeutic applications.

The award brings together experts from heart, lung, blood and technology research to create 18 multidisciplinary teams of investigators whose goal is to identify and characterize progenitor cell lines, direct the differentiation of stem cells and progenitor cells to desired cell fates, and develop new clinical strategies to address the unique challenges presented by the transplantation of these cells.

"This award places Vanderbilt on the forefront of stem cell research and heart regeneration," said Antonis Hatzopoulos, Ph.D., associate professor of Medicine. "Vanderbilt is also part of the five clinical centers in the Cardiovascular Cell Therapy Research Network (CCTRN). Only two medical institutions in the country play leading roles in both the clinical and basic science arms of stem cell research.

"The parallel clinical and basic science studies create a unique environment for truly translational research," said Hatzopoulos, director of the Vanderbilt portion of the project.

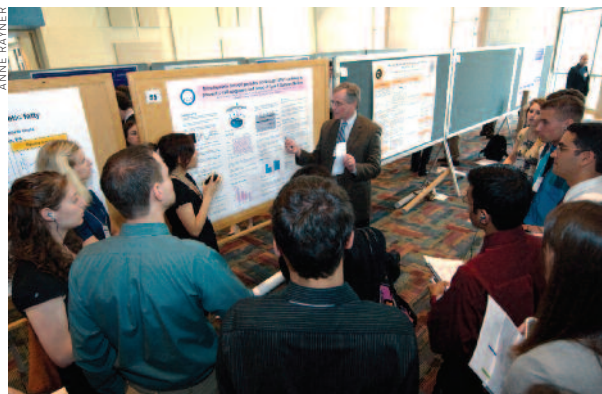
"This translational setting provides unique opportunities for novel discoveries."

There are three investigators involved in the Vanderbilt research team — Hatzopoulos, Doug Sawyer, M.D., Ph.D., chief of the Division of Cardiovascular Medicine, and Scott Baldwin, M.D., chief of the Division of Pediatric Cardiology and co-director of the Pediatric Heart Institute.

"The prospect of cell therapy as a strategy to repair organs such as the heart is very exciting," said Sawyer. "At Vanderbilt, we are fortunate to be part of a number of studies, including clinical trials, in this arena." **VM**

— JESSICA PASLEY

Alvin Powers, M.D., center, talks with students during the Medical Student Research Symposium poster presentation.



Diabetes research program trains 27 medical students

Medical students from across the country spent their summer "vacations" getting a taste of research in diabetes and endocrinology.

Vanderbilt's Medical Student Research Training Program (SRTP) in Diabetes, Endocrinology and Metabolism — funded by the National Institute of Diabetes and Digestive and Kidney Disease (NIDDK) and the Vanderbilt Diabetes Center — provides intensive, high-quality research experience for medical students early in their academic careers.

Vanderbilt's program — now in its 25th year — has provided research training for more than 700 medical students from 65 medical schools. This summer, 27 students from Vanderbilt University School of Medicine and other medical schools across the country spent their summers conducting independent research projects — ranging from basic science to clinical studies in humans — under the direction of Vanderbilt faculty.

"(The program) has been very instrumental in motivating medical students to choose career paths as physician scientists," said Wanda Snead, DHS, M.S., manager of the Hormone Assay and Analytical Services Core and associate director of the program. "And because our program has been successful, we assisted the NIDDK in developing and organizing a national program with ours as the prototype."

This marks the first year that all 17 NIDDK-sponsored Diabetes Research and Training Centers (DRTC) and Diabetes and Endocrinology Research Centers (DERCs) in the country have at least two to four students working on summer research projects, said Snead.

The program is directed by Alvin Powers, M.D., director of the Vanderbilt Diabetes Center and co-directed by Snead and David Wasserman, Ph.D., professor of Molecular Physiology and Biophysics.

As the summer wound down, about 85 medical students from all 17 participating diabetes centers came to Vanderbilt to present their work. The 27 students performing research projects in Vanderbilt labs also presented their work at a special poster symposium with the Board of Directors of the Vanderbilt Diabetes Center. **VM**

— MELISSA MARINO

Informatics drives innovative School of Medicine program

A pilot program at Vanderbilt University School of Medicine is using high-level informatics to enhance students' learning during third- and fourth-year rotations.

The program, called Vanderbilt Core Clinical Curriculum (VC3), uses technology to document each student's exposure to 25 carefully selected core medical problems to ensure they become well-prepared physicians.

"It was important that we devise learning objectives for a list of problems that each student should master by the end of medical school," said program co-designer Anderson Spickard III, M.D., M.S., associate professor of Medicine and Biomedical Informatics and director of medical clerkships for the Department of Medicine.

"It isn't everything they need to know, but if they know these, they will know a lot of medicine."

Key elements of VC3 are:

- Students' Star Panel patient notes from inpatient and outpatient rotations are copied to a program in Vanderbilt's Knowledge Map called "KM Portfolio."
- Concepts in each note are automatically captured and matched to the 25 problems (examples include chest pain, trauma, altered mental status and abdominal pain).
- Master clinical teachers act as mentors to review the competency experiences with students throughout the year.
- Computerized reports help determine the extent of exposure to core clinical problems and a student's proficiency in each core problem.

"Using information from VC3 we can track students' exposure to areas of competencies and tailor experience and teaching to meet students' needs," Spickard said. **VM**

- CAROLE BARTOO

Biological tissue's 'glue' identified

Researchers at Vanderbilt University Medical Center have discovered a novel chemical bond in biological tissue, a fundamental discovery that helps explain evolutionary adaptation and may shed light on human disease.

The novel sulfilimine bond, between a sulfur and a nitrogen atom, acts like a "fastener" to reinforce a collagen IV network found in connective tissue throughout the body. It is "an apparent adaptation crucial for ... evolution," the researchers reported in *Science* magazine.

"Every tissue in your body has got this bond," said Billy Hudson, Ph.D., senior author of the paper and director of the Vanderbilt Center for Matrix Biology. "It is the 'glue' ... that helps hold together the extracellular matrix."

The extracellular matrix provides structural support in all tissues and molecular cues for influencing cell behavior.

The finding "is just scratching the tip of the iceberg," added the paper's lead author, Roberto Vanacore, Ph.D., research assistant professor of Medicine. The Vanderbilt researchers are now searching for the enzyme that makes the bond, and for diseases that may be caused by a defective bond.

Hudson, the Elliot V. Newman professor of Medicine, Biochemistry and Pathology, has been studying the glomerular basement membrane of the kidney for more than 40 years.

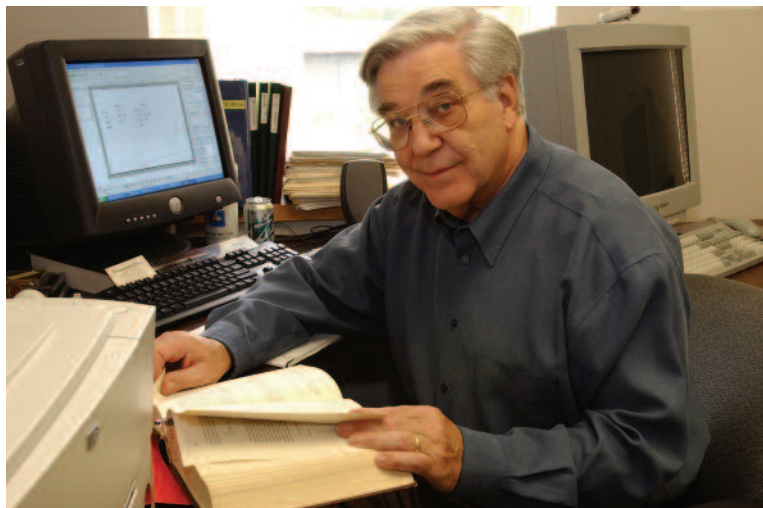
The basement membrane, which supports cells in the extracellular matrix, consists largely of type IV collagen. The collagen, in turn, is constructed from a family of proteins called alpha chains that twist around each other to form triple helical "protomers," like cables supporting a bridge.

While at the University of Kansas Medical School in Kansas City, Hudson and his colleagues discovered two previously unknown alpha chains, which are defective in an inherited kidney disorder called Alport syndrome.

One of the chains, they found, is also involved in a rare, auto-immune kidney disease called Goodpasture syndrome.

There is some evidence that the misguided antibody attack on the kidney's basement membrane may be triggered by exposure of a previously hidden part of collagen caused by the absence or breakage of the sulfilimine bond, Vanacore said. **VM**

- BILL SNYDER



DANA JOHNSON

Billy Hudson, Ph.D., director of the Vanderbilt Center for Matrix Biology



Twins Isabel and Owen Willers benefited from an early screening for retinopathy of prematurity, which can cause blindness.

Screening key to halting vision disorder in premature infants

Retinopathy of prematurity (ROP) is the leading cause of irreversible blindness in children worldwide. If detected early, it can be treated.

But the diminishing number of trained specialists to screen premature babies for ROP is making it a tough condition to manage.

"It is becoming increasingly more difficult for NICUs to retain appropriate physician coverage to provide these exams," said Franco Recchia, M.D., chief of the Retina Division at the Vanderbilt Eye Institute (VEI).

Nationally, the number of ophthalmologists performing screening exams for ROP has dropped by half, said Recchia. Thankfully, Vanderbilt sees things differently, he said. As other hospitals are cutting back on screenings, VEI specialists are stepping up.

Recently Vanderbilt began providing eye care screenings for Erlanger Children's Hospital in Chattanooga, Tenn.

"We felt that this was an important enough service for the good of these children and we were very willing to provide the services," said Recchia.

"We know that most children who are born early will develop some degree of ROP. While it usually regresses spontaneously, there are still a significant number of patients who are at risk for vision loss if not treated with laser surgery.

"Of the babies we screen, about 10 percent require laser treatment and we do this procedure within 48 hours of diagnosis," Recchia said. "When correctly applied, it reduces the chance of an unfavorable outcome by 90 percent."

Recchia said that as advances in neonatal care grow, more fragile children are surviving.

"The overall incidence of ROP has not increased, but we are seeing more severe cases because the younger these babies are born and the smaller they are, the more at risk they are for developing severe ROP." **VM**

- JESSICA PASLEY

Genes converge to boost risk of sudden death

Congenital long-QT syndrome, an inherited cardiac disease, is a known cause of sudden death, especially in young adults and children. But not all people who have gene mutations that cause congenital long-QT syndrome have symptoms (fainting, cardiac arrest, sudden death).

The big question mark is how to manage a patient who has a long-QT gene mutation, but doesn't have any symptoms, said Alfred George Jr., M.D., director of the Division of Genetic Medicine at Vanderbilt University Medical Center.

"The concern, of course, is that the first symptom could be sudden death," he said. "And everything needs to be done to try to prevent that.

"But does every mutation carrier need an implantable defibrillator? Pharmacological therapies? Or should they just be watched?"

The variability in symptoms suggests that other factors play a role – either to promote or prevent symptoms.

George and a multinational research team searched for "genetic modifiers" of long-QT syndrome – genes (other than the disease-causing gene) that play a role in the disease. The investigators studied an extended South African family affected by long-QT syndrome – of 500 characterized family members, 205 carry the same long-QT causing mutation.

They found that people who had the primary long-QT-causing mutation and one of two common variants of a gene called NOS1AP had a higher probability of cardiac arrest and sudden death than primary mutation carriers who didn't have those NOS1AP variants. The findings, reported in the journal *Circulation*, will help in assessing the risk of sudden death – and assigning therapy – in patients with this syndrome. **VM**

- LEIGH MACMILLAN

Ebb, flow of physician workforce studied

Amid concerns about a national physician shortage, a new study found that more young physicians are entering the workforce and fewer older physicians are remaining active, resulting in estimates for a smaller and younger physician workforce now and in the future.

The study was published in the *Journal of the American Medical Association* by Douglas Staiger, Ph.D., of Dartmouth College, David Auerbach, Ph.D., of the Congressional Budget Office, and Peter Buerhaus, Ph.D., R.N., of Vanderbilt's Center for Interdisciplinary Health Workforce Studies and Vanderbilt University School of Nursing.

Researchers compared data from the American Medical Association Physician Masterfile (Masterfile), a data source frequently used by physician workforce analysts, with data from U.S. Census Bureau Current Population Survey (CPS), used extensively by the U.S. Department of Labor to estimate current trends in employment.

Reviewing data from both sources from 1979 and 2008, the study found:

- The CPS estimated 67,000 fewer active physicians than did the Masterfile
- Older physicians accounted almost entirely for the lower estimates of active physicians in the CPS.
- The CPS estimated 22,000 fewer active physicians per year ages 55 to 64 than did the Masterfile, and estimated 35,000 fewer active physicians per year 65 or older than the Masterfile.
- The CPS estimated more young physicians (ages 25 to 34 years) than did the Masterfile.
- Female physicians are 59 percent as active at 25 to 34 years and 98 percent as active at 55 to 64 years, using CPS data.
- Both data sources indicate that the number of active physicians will increase by approximately 20 percent between 2005 and 2020. **VM**

- KATHY RIVERS

High-fat diet's impact on brain explored

Does fast food mess with your brain?

That's one of the questions Vanderbilt scientists Kevin Niswender, M.D., Ph.D., and Aurelio Galli, Ph.D., hope to answer with the help of a \$5.2 million "transformative" research grant from the National Institutes of Health (NIH).

Their hypothesis: consumption of high-fat, high-sugar foods can disrupt insulin signaling in the brain, and its regulation of neurotransmitters involved in mood and behavior. This may explain "food addiction," and could lead to new ways to treat obesity and diabetes.

"It's really very strange to be using this sort of addiction language for a metabolic disorder like obesity, but the basic mechanisms seem to fit," said Niswender, assistant professor of Medicine.

In 2007, Galli and colleagues at Vanderbilt and the University of Texas in San Antonio reported that insulin, the hormone that governs glucose metabolism in the body, also regulates the brain's supply of dopamine.

They were among the first to find a link between decreased insulin signaling, which occurs in insulin-deficient (or Type I) diabetes, and altered dopamine signaling, which contributes to addiction, schizophrenia and attention-deficit hyperactivity disorder (ADHD), and which can cause cognitive problems.

Previously Niswender and colleagues identified the signaling mechanisms by which hormones like insulin and leptin regulate feeding.

In work done at Vanderbilt, his group has uncovered mechanisms by which high-fat diets contribute to brain insulin resistance, where insulin is present, but does not work effectively.

Galli and Niswender collaborated to ask the question: could consumption of "fast foods" and soft drinks sweetened by fructose disrupt insulin signaling in the brain in a way that leads to food addiction and obesity?

Because insulin resistance impairs the normal dopamine "reward pathway," you may have to eat "more of the same high-fat, high-carbohydrate types of foods to give you the same amount of reward you used to get," Niswender said. **VM**

- BILL SNYDER



ISTOCKPHOTO

New Critical Care Tower opens

BY LESLIE HAST

The new Critical Care Tower, a 329,000-square-foot addition to Vanderbilt University Hospital that opened in November, combines the human touch with technology to care for Vanderbilt's most vulnerable patients.

"The Critical Care Tower is a place where some of our patients who are most in need can receive great care in one of the best facilities in the country. It is also a symbol of our commitment to surrounding those patients with both the latest in technology and with family-focused care – personalized medicine at its best," said Jeff Balser, M.D., Ph.D., vice chancellor for Health Affairs and dean of Vanderbilt University School of Medicine.

The Critical Care Tower is located alongside the north and south towers of Vanderbilt University Hospital. The 11-story addition houses 12 new operating rooms and 102 patient beds in the medical, surgical and neurological intensive care units.

The \$169 million expansion meets an ever-increasing demand for inpatient bed and surgical services.

"The Critical Care Tower project will not only allow us to address our capacity needs, but will also provide facilities that will support our implementation of cutting edge technologies," said Larry



Goldberg, chief executive officer of VUH. "We have experienced significant growth over the past decade, which few hospitals have been able to achieve throughout the country. The new Critical Care Tower will allow us to serve more of the community and continue to deliver the quality care which we provide at Vanderbilt."

Patient rooms, which average 320 square feet, were designed in an innovative three-zone layout. The staff zone gives the care team plenty of room to work around the bedside, and there is a computer in every room for documentation.

The patient zone includes an ICU Smart Bed with enhanced functions and safety features. The head wall has a variety of hook-ups, including dialysis in every room. There is also a blood gas lab and radiology room on every unit for faster test results.

The family zone reflects an increasing emphasis on patient- and family-centered care with a dedicated space for family to stay at the bedside.

The new 11-story Critical Care Tower opened in November after three years of planning and construction. It houses 12 new operating rooms and 102 inpatient beds.

All rooms are private and include a full bath and sleeper sofa or recliner. Each unit also includes an active waiting area with a TV and computer and a quiet waiting area with comfortable recliners.

There are six isolation rooms on each unit, and three rooms have bariatric lifts.

The focal point of the tower is a central atrium with skylights bringing in natural sunlight. It can be accessed from the sixth floor and has comfortable seating, artwork, a meditation garden and live trees. Interior finishes mimic colors and textures found in nature. Walls are painted in soothing blue and green tones with wood and stone accents.

The new operating rooms are large enough to accommodate the latest technology, including two that were specially equipped with single plane and biplane imaging systems. All ORs have the latest telemedicine capabilities. They are interchangeable and available for any service, and

shelving is standardized so restocking is more efficient and specialty items can be brought in as needed.

To support the expanded surgical services, a new blood bank was constructed on the fourth floor of The Vanderbilt Clinic. It consolidates the adult and pediatric service to increase efficiency.

The Critical Care Tower meets immediate needs but was also designed with the future in mind.

"A big challenge is to make sure we are not only providing what is needed today but what we might need in 10 years," said architect Jim Tenpenny. "We may not know of all the new stuff that will be available in 10 years, but I know it's going to need more power, more data and more cooling. We have to provide the backbone to support it even though we don't know what it will be." **VM**

+

WHEN
IT
COMES
TO
VACCINES,

KATHY EDWARDS
CALLS
THE
SHOTS

WRITTEN BY JOHN HOWSER
PHOTOGRAPH BY SUSAN URMY

As the first global pandemic to be declared by the World Health Organization in nearly 40 years began to bear down on the United States, Kathryn Edwards, M.D., one of the nation's leading vaccinologists, was tasked with executing a near miracle: quickly test the efficacy and safety of a new H1N1 vaccine.

Edwards delivered and delivered big.

Collaborating with seven other Vaccine Treatment and Evaluation Units, a group of the nation's top vaccine research centers supported by the National Institutes of Health (NIH), Edwards, professor of Pediatrics and director of the Vanderbilt Vaccine Research Program, and her team of vaccine researchers completed the whole project without a hitch. At Vanderbilt they enrolled more than 300 volunteers and tested the new vaccine in three separate groups, completing these trials in less than two months. Another challenge met and another remarkable task accomplished.

"It is a source of pride to Vanderbilt that Kathy and her team were one of the groups selected to perform clinical trials for the H1N1 vaccine. Their expertise was called upon when the nation needed them, and they responded completely," said William Schaffner, M.D., professor and chairman of the Department of Preventive Medicine and a longtime colleague.

As testament to the high-energy approach to her work, perhaps forged during her Midwestern upbringing in Iowa, Edwards has led a seemingly countless number of trials for just about every infectious disease for which an effective vaccine exists. Over the course of a 30-year career at Vanderbilt, she has tested vaccines for H5 avian flu, pertussis, pneumococcus, smallpox, anthrax and numerous others. The list amounts to a veritable rogue's gallery of infectious disease pathogens.

As Schaffner noted, she is a great example of someone whose focus is always on what's good for patients rather than a particular pathogen.

"Dr. Edwards is a classic 'triple-threat' academic physician-scientist. She is a skilled and empathetic clinician, a gifted teacher and mentor who can motivate trainees, whether they are young novices or more experienced professionals, as well as being an indefatigable original investigator who can frame questions that go to the heart of the question at issue," Schaffner said. "Also, she is fun to be around with a quick sense of humor!

"Dr. Edwards' research has focused on preventing disease, medicine's highest goal. Her reward is that classical infectious diseases of childhood such as polio, *Haemophilus influenzae* B and pertussis have been eliminated or are on the wane. Her joy is that she can focus on the next target like malaria."

In order to amass such a body of work she is always in motion. She walks briskly through the halls of the Medical Center as she makes her way from her office in Medical Center North, to the Clinical Research Center, to her pediatric patients at the Monroe Carell Jr. Children's Hospital at Vanderbilt. She moves and speaks with purpose.

While her career was blossoming into the role of one of the nation's eminent vaccine researchers, Edwards never let go of her ties to patient care and teaching, still seeing patients on a regular basis and mentoring a vast number of up and coming pediatric researchers over the years.

"I still really like taking care of patients. It's something that I do that helps make the rest of my work seem relevant. I feel that's why I'm still a doctor because I want to help sick people get well,"



Kathy
Pediatric
Professor

Edwards said. “But through research you don’t just take care of one patient; you take care of a whole cadre of patients.

“Besides, being a pediatrician has been one of the good things I’ve done that has really helped my career. By and large, if you are a person who has kids routinely vomiting and peeing on you, it’s hard to be incredibly self-important,” she said with a laugh.

It was through these years of hard work, trial and error, and conducting large-scale vaccine studies that prepared Edwards to succeed on the pressure-packed mission of testing the H1N1 flu vaccine in such a short period of time. The experience taught her the importance of making participation in a study as convenient and rewarding as possible for the volunteers – even if it wasn’t for her.

“When I first began my career in clinical research, I thought that the public would be interested in participating in studies simply because they answered important scientific questions,” she said. “However, after the initial years, when it was extremely difficult to conduct studies without incentives, I added a financial incentive and also made every effort to

make it easy for the subjects to comply. This included meeting subjects at hours convenient to them and not to me, arranging transportation if needed, and making study participation as easy as possible for them.

“It was about making needed sacrifices for the participants, it was about finding ways to circumvent obstacles and turn them into opportunities.”

Edwards identifies the five key functions of her work as: performing government-funded research, serving on advisory committees that translate clinical research findings into practice and public policy, serving as a mentor to young investigators, caring for patients, and teaching medical students about pediatric infections.

“The biggest reason I came to Vanderbilt was Kathy,” said Buddy Creech, M.D., M.P.H., assistant professor of Pediatrics. “When I was in medical school, one of my deans, when I asked where I should go for residency, suggested that I should go to Vanderbilt, sit at Kathy’s feet, and learn everything she knows.”

Creech is now a research collaborator with Edwards, with an office next door,

and is a rising star in his own right within the field of pediatric infectious diseases.

“Kathy has an uncanny way of mentoring young physicians to their strengths. For me, that meant telling me as a first-year fellow, ‘we should do grand rounds on MRSA.’ What I didn’t yet understand is that in mentor language, ‘we’ meant that I should do grand rounds on MRSA. The fear and trepidation of giving grand rounds soon transitioned to excitement and confidence as I immersed myself in the literature and planned the talk with Kathy,” Creech said.

“At the end of the day, Kathy has not only provided me with a scientific career path, she also began the process of teaching me what it meant to be a physician-scientist with an expertise in a specific area. Her enduring legacy will not only be the vaccine studies she has led or the new discoveries in pediatric infectious diseases she has made; rather, her lasting influence in the field will be the vast number of people who consider her their ‘academic mother,’ providing guidance, support, encouragement, and sometimes a motherly nudge when appropriate.”

Edwards says the key to her long success as a vaccine researcher has to do with teamwork, specifically picking the right team. Her advice for young investigators is to find collaborators who have a reputation for doing what they say they will do, work well with others, show respect for their colleagues and meet deadlines.

“Kathy never hesitates to jump in the trenches with the rest of her staff to recruit, enroll, and maintain the safety of the volunteers in our clinical trials,” said Debbie Hunter, R.N., B.S.N., clinical trials recruitment coordinator in Pediatric Infectious Diseases. “I have worked for many medical professionals in my 17 years of nursing, and I have never been as fortunate as I am now. Kathy has a special ability to give you the confidence and support to help you achieve the goals you set for yourself.”

Hunter offers a colorful, yet highly accurate account of the frantic pace at which Edwards frequently works. “On a recent conference call with the NIH, Kathy

Kathy Edwards, M.D., interviews Mary West, an H1N1 vaccine study volunteer.



JOE HOWELL

jumped up and whispered to us that she must leave to catch a plane. Not wanting to miss any details from the call, Kathy called back from her cell phone once outside the building. During a moment of silence on the call we heard ‘that sounds good’ as Kathy joined back in. This was followed shortly by, ‘I’m sorry. I’m walking somewhere to get somewhere,’” Hunter said.

Edwards says she is particularly intrigued by finding ways to circumvent obstacles. “As an only child who was very willful, I generally would not take ‘no’ for an answer,” she said. “I find that trait has been extremely important to the success of my clinical research. The more challenging the question or difficult the obstacle, the more I am intrigued to solve it.”

The first big challenge Edwards tackled after joining Vanderbilt’s faculty was testing a brand new diphtheria, tetanus and pertussis (DTP) vaccine. The original DTP vaccine had many side effects, including high fevers and even seizures in a small percentage of children. The problem was so pervasive, many parents, particularly in Japan and the United Kingdom, would no longer allow their children to receive the vaccine. As a result, the incidence of pertussis, also known as whooping cough, began to rise dramatically in the late 1970s and into the 1980s, and so did deaths associated with the disease.

An added consequence from the vaccine’s poor safety profile was an enormous number of lawsuits. As a result of bad press and related lawsuits, testing a suitable new DTP vaccine in children presented a significant recruitment challenge. However, the problem presented an opportunity. As a result there was a lot of money infused into the system to create new vaccines thus providing the first major research opportunity in Edwards’ budding career.

“We gave a new DTP vaccine that was manufactured in Japan first to adults and then to children in a Phase 1 trial. We even made home visits to some of the volunteers so they would participate. The safety profile for the new vaccine was really smashing, much, much better,” she

“Vaccines are all about **risks versus benefits**. The best vaccines prevent bad diseases. When the disease itself is reduced, then it is possible for adverse vaccine events to occur more often than the disease it is meant to prevent.”

said. Edwards followed the DTP vaccine through Phase II and into successful completion of Phase III, NIH-funded trials.

This experience and countless other trials have given Edwards a wealth of knowledge.

“My golden rule of clinical trials is that it is very important to never be too good to do what you ask of others. In one of the H1N1 trials we enrolled 150 people in five days. We worked from six in the morning until 10 at night. But we were all working together. Don’t ask people to do things you won’t do yourself. It’s empowering for them to see you share in the work,” she said. “My other golden rule is that an investigator needs to be able to perform all aspects of the work.”

Recently, while speaking with a group of admiring young investigators eager to glean secrets of her success, Edwards spoke of what she calls the “bottom line” about the public’s perception of vaccines.

“The better we do our work and the better the vaccine, the disease goes away. Then people tend to forget about the disease and think it wasn’t too bad. But if we stop vaccinating then the disease will come back. So it’s a delicate balance between safety and perception,” she said. “Vaccines are all about risks versus benefits. The best vaccines prevent bad diseases. When the disease itself is reduced, then it is possible for adverse vaccine events to occur more often than the disease it is meant to prevent.”

With impressive enthusiasm and an enviable level of energy, Edwards still has

much work to do, more vaccine trials to conduct and more people to protect from the scourge of disease. She could rest on her laurels, having already made significant contributions to the field of infectious diseases prevention. But her desire for further successes propels her forward.

“Kathy Edwards is that rare blend of compassion, intellect and drive that makes Vanderbilt University great,” said Jonathan Gitlin, M.D., assistant vice chancellor for Maternal and Child Health Affairs, chair of Pediatrics and physician-in-chief of the Monroe Carell Jr. Children’s Hospital at Vanderbilt.

“While she is humble and self-effacing about her own work, it is important to realize that through her creativity and passion vaccine science has been advanced, lives have been saved and a generation of young pediatricians has been educated.”

For her next major project Edwards and her team are going to begin a new U.S. Centers for Disease Control and Prevention-funded pneumonia study which will enroll 1,300 adults and children with pneumonia who are admitted to area hospitals.

“Although I have not worked with these other hospitals before, I am seeking new ways to convince the physicians and nurses at those hospitals that the study is important and that they will benefit in participation,” she said. “It is about finding win-win opportunities for all involved. It will be a challenge but one that will keep me coming to work each day, eager to solve new problems.” **VM**



THE POSSIBILITIES *of* PERSONALIZED MEDICINE

What if your doctor could tell by reading your genetic code which drugs were most likely to work for you, and which you should avoid, even before you try them?

What if a “genetic biopsy” taken from your cancer could pinpoint the treatment most likely to kill the tumor, and with the fewest side effects?

What if your “genetic medical record” flagged previously undetected risk factors for illnesses you could take steps to prevent?

These are some of the tantalizing prospects in the burgeoning field known as personalized medicine that are being pioneered by scientists and health care providers at Vanderbilt University Medical Center.

WRITTEN BY **BILL SNYDER**
ILLUSTRATION BY **PETE MCARTHUR**

Not too many years ago the idea was considered fanciful,

that with genetics as their thread, doctors could fashion for each of their patients a medical care coat that fit them perfectly, restored them to health, kept them well and saved money to boot.

Today personalized medicine is rapidly inserting itself into the scientific literature, muscling into the doctor-patient relationship and sweeping through the popular culture. The question no longer is what if these things could happen, but when will they?

For the past several years, for example, Vanderbilt scientists have been testing the value of “pharmacogenomics.” Can variations in an individual’s genetic make-up, his or her genotype, when correlated with clinical data, reliably predict response to commonly prescribed drugs?

If so, which of these variations should be routinely embedded in the electronic medical record even before the patient gets those medicines? Could this information help doctors avoid adverse drug effects, a leading cause of death among hospitalized patients?

Vanderbilt researchers hope to answer these questions in their latest study, called Vanderbilt Electronic Systems for Pharmacogenomic Assessment (VESPA), supported by a two-year, \$6.4 million stimulus grant from the federal government.

“I think it’s very likely that within the next year we could actually have a real-world, on-the-ground plan for personalized medicine, where we would recognize that it is best practice and cost-effective for us to do a standard set of limited genotypes on every single person,” predicted Dan Masys, M.D., chair of Biomedical Informatics.

Masys is co-principal investigator of the VESPA project with Dan Roden, M.D., assistant vice chancellor for Personalized Medicine.

THE CHALLENGES

Before we start screening everybody for everything, however, it’s worth pointing out a few challenges.

For one thing, this is not going to be easy.

Most common diseases, like diabetes or hypertension, result from the interactions of more than one gene and probably the environment as well. Multiple genetic variables also determine how medicines are metabolized, or broken down by the body, thereby complicating the search for predictors of drug response.

“The likelihood that we can solve most of these problems solely by genetics I think is optimistic at best,” cautioned clinical pharmacologist Alastair Wood, M.D., an emeritus professor at Vanderbilt and partner in a New York-based biopharmaceutical investment firm.

That’s not the half of it.

“Personalizing medicine is about far, far more than people’s genes,” said Roden, who also directs the Oates Institute of Experimental Therapeutics. “It’s about who you are and what you eat, what you’re exposed to.”

For example, take two people who carry a gene for asthma susceptibility. Neither smokes, but one is a Phoenix resident with good health coverage while the other lives in a city with dirtier air and is uninsured. “Those are two very different kinds of people,” Roden said.

A third challenge is economic.

Despite the cost-saving promises of personalized medicine, the nation’s health care bill could actually balloon if genetic screening is allowed to flourish without the restraints of evidence-based medicine – doing only those things that are proven to work.

It’s well known that screening newborns for certain inherited disorders can yield significant savings by preventing the costly consequences of disease.

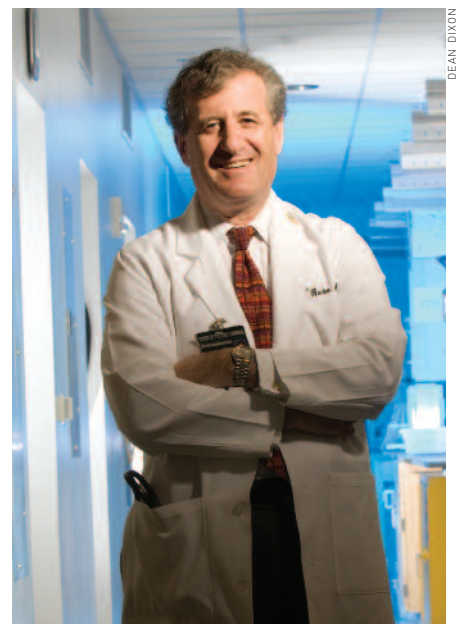
“But in general, the more you test, the more you do and the more it costs,” said Ellen Wright Clayton, M.D., J.D., director of the Vanderbilt Center for Biomedical Ethics and Society. “We end up treating a lot of abnormalities that probably don’t need to be treated.”

Yet the pressure is on.

As the number of tests for different genetic diseases has soared, from about 100 in 1993 to more than 1,700 in 2008 according to one survey, so has the number of gene-testing firms.

More than 170 U.S. companies now market directly to the consumer, Clayton said, even though the medical value for

Dan Roden, M.D., assistant vice chancellor for Personalized Medicine



many of the tests they offer has not been established. “We have real reason to be concerned about whether people are even getting useful information,” she said.

THE RIGHT DOSE

That doesn’t mean personalized medicine should be abandoned – on the contrary.

In the 1990s, Richard D’Aquila, M.D., helped pioneer HIV genotyping. The method identifies genetic variations in AIDS viruses that infect individual patients, and which allow the viruses to “escape” or become resistant to drug therapy.

Now standard practice, genotyping patients’ viruses helps doctors avoid drugs that won’t work, and it improves the success of treatment, said D’Aquila, who currently directs the Vanderbilt-Meharry Center for AIDS Research.

Vanderbilt researchers led by David Haas, M.D., also have helped identify several genetic markers in patients that predict how they will respond to AIDS drugs and whether they may experience life-threatening side effects.

“There is great enthusiasm about the potential to use human genetic information to inform prescribing of HIV medications,” said Haas, who directs the Vanderbilt AIDS Clinical Trials Program. “This may be particularly relevant to resource-limited countries that are most affected by the AIDS pandemic, and where the ability to closely monitor patients for treatment efficacy and toxicity is limited.”

Vanderbilt scientists also are helping to push forward the frontiers of anti-coagulation therapy.

Every year in the United States, more than 2 million people take warfarin, brand name Coumadin, primarily to prevent blood clots after a heart attack, stroke or major surgery. Because patients’ responses to the drug vary widely, however, it’s difficult to find the dose that blocks clots without causing serious internal bleeding.

It’s been known for several years that variations in two genes can affect how warfarin is metabolized and therefore how

Gene sequencing: tip of the iceberg

When the rough draft of the human genome was unveiled in 2001, many scientists were astonished to learn it contained only about 30,000 genes, just a third more than the number required to make the simple roundworm, *C. elegans*.

Since then, the estimate has been revised downward, to between 20,000 and 25,000 genes. Clearly the complex organism that is human must arise from more than just the genes, but likely reflects interactions among the genes, the multiple proteins they encode and the environment.

It would appear, then, that reading the gene sequence is just the beginning of the road to personalized medicine.

As important as the genetic revolution has been to our current understanding of human disease, equally important has been the informatics revolution, the development of computer-assisted technologies capable of analyzing the gargantuan amount of data coming out of the genome.

This is one reason Vanderbilt University Medical Center is positioned to be a leader in personalized medicine. Its Department of Biomedical Informatics, one of the

first in the country, is also the largest, with 66 faculty members.

“It represents Vanderbilt’s commitment over more than two decades to the principle that what will differentiate us in the 21st century as an academic health center is our ability to effectively manage data, information and knowledge, and bring it to the point of decision-making,” said the department’s chairman, Dan Masys, M.D.

The commitment goes back even farther, added Dan Roden, M.D., assistant vice chancellor for Personalized Medicine and director of the Oates Institute of Experimental Therapeutics.

Back at least to 1963, when John Oates, M.D., established the Division of Clinical Pharmacology and galvanized a group of physicians and scientists to explore variability in drug responses and other clinical problems before they were “fashionable,” Roden said.

Vanderbilt’s leadership position reflects the willingness of the university to invest in new technologies, facilities and people, and the openness of its faculty to try new approaches.

During the past two years alone, Vanderbilt scientists have (among many other things):

- Identified mutations that may contribute to one cause of sudden infant death syndrome (SIDS), to abnormal

heart rhythms that can be lethal, and to age-related macular degeneration, a leading cause of blindness;

- Found genetic clues that may help crack the mysteries of autism and Alzheimer’s disease, and which may improve diagnosis and treatment of attention-deficit hyperactivity disorder; and
- Launched a new initiative to tailor better-targeted therapies for lung cancer and melanoma, based on the unique genetic portraits or “genotypes” obtained from patients’ tumors.

Another ingredient that distinguishes Vanderbilt is its “culture of caring,” said Jeff Balser, M.D., Ph.D., vice chancellor for Health Affairs and dean, School of Medicine.

“Personalized medicine isn’t just about DNA sequencing and knowing what drug to give people,” he said. It includes “looking at the entire context of the individual – their social situation, their age, their resources, and (tailoring) care specifically to that individual.

“Equally important is the compassionate, personal touch in our care for patients,” Balser continued. “It is all personalized medicine ... and I believe we are creating the future of personalized medicine at Vanderbilt.”

– BILL SNYDER

fast it is eliminated from the body. In 2007, the U.S. Food and Drug Administration notified doctors that testing for these variants could help them estimate the proper dose to give patients.

Last year, a report by an international research consortium including Vanderbilt helped put the FDA policy into practice. The researchers found that they could increase the accuracy of the dose estimate when genetic information was combined with clinical data.

The next step, to be pursued in the VESPA study, will be to show that such an approach actually improves outcomes. VESPA also will take on another best-selling blood-thinner, Plavix, which has been routinely prescribed to reduce blood clot formation following procedures to open blocked arteries.

Many patients aren't at risk of clotting, and some patients have a reduced response to Plavix because they lack the enzyme necessary to convert it into its active form. But most get the drug anyway because their doctors can't tell who really needs it.

"The most common adverse drug effect is ... it just doesn't work," Masys said. Americans spend billions of dollars each year on prescription medication. Cutting out useless and harmful medication "could pay for a big chunk of health reform," he said.

WORK STATION MEDICINE

The engine powering VESPA is Vanderbilt's massive DNA databank, BioVU.

One of the largest of its kind in the country, the databank contains more than 75,000 DNA samples and their matching medical records that have been de-identified, meaning that all personal information has been stripped away to guarantee patients' anonymity.

A young assistant professor, Bradley Malin, Ph.D., is the privacy expert in the Department of Biomedical Informatics, while two colleagues, Joshua Denny, M.D., and Hua Xu, Ph.D., have applied "natural language" processing technologies

Today personalized medicine is rapidly inserting itself into the scientific literature, muscling into the doctor-patient relationship and sweeping through the popular culture. The question no longer is what if these things could happen, but when will they?

to extract relevant information from the electronic medical record.

Natural language is a way of teaching computers to "read" and evaluate provider notes and other relevant clinical information that have been entered into the medical record. It provides a more accurate picture of the patient's diagnosis than do the billing codes used for reimbursement, Masys said.

But herein is the rub.

"There's just no way you can insert this information into health care operations without what we call computerized, patient-specific clinical decision support, that is, work station-based medicine," Masys said. "There are too many things to remember, too many facts, too many complexities." Yet only about 5 percent of U.S. hospitals have this kind of decision-support infrastructure.

Dan Masys, M.D., is the strategic architect of Vanderbilt's biomedical informatics efforts.



SUSAN URMY

Roden agreed. "The barriers to implementing what we think we already know are pretty daunting, but they're straightforward," he said. "The data have to be in the record and accessible with a mouse click."

And there are other questions that must be answered for personalized medicine to move into the mainstream.

Should research subjects be contacted if their DNA is found to contain a severe chromosomal abnormality they could pass on to their children?

If a patient is found to have a high-risk disease gene, should family members be notified so they also can be screened, even against the patient's wishes?

Should people with a family history of a disease be required to undergo genetic testing?

Roden is optimistic that these challenges will be resolved, particularly as the cost of gene sequencing continues to fall and as the benefits of genotyping become more apparent.

Flight of fancy? Maybe. But 30 years ago, so was the Internet or the idea of a wireless phone you could put in your pocket.

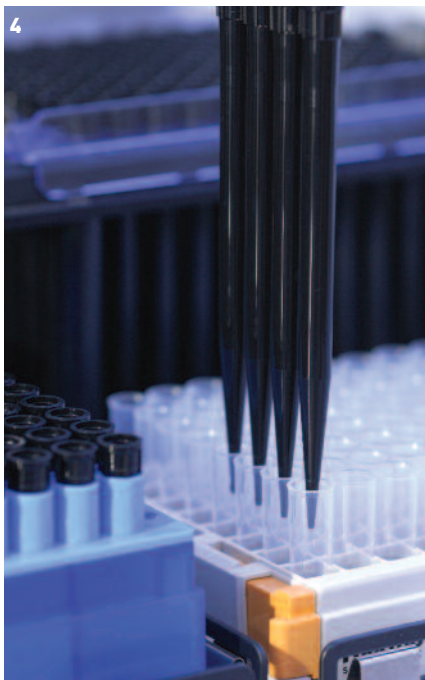
Perhaps 30 years hence, Roden mused, "I wake up in the morning and put my finger in a hole in the wall, and a sensor tells me how much drug is circulating in my body ... whether I'm going to get the flu (and) that my diabetes is in good control.

"It sounds nutsy, but nutsy in a doable way, with nanosensors and advanced mass spectrometry," he said. "Maybe that's the way it's going to work." **VM**

WEB LINK

Will personalized medicine save money? To read more on this topic please visit www.vanderbilt.edu/vanderbiltmedicine.

PHOTOS BY ANNE RAYNER



DESTINATION DNA

BioVu is a growing Vanderbilt clinical research DNA databank linking de-identified medical records with genetic samples from some 75,000 patients.

- 1) Leftover blood samples from Vanderbilt's clinics are retrieved daily from the Pathology lab.
- 2) Technicians scan vials to check for exclusion criteria.
- 3) New labels are generated for accepted samples and a random identifier is applied.
- 4) DNA is extracted from the blood and transferred into tubes for storage.
- 5) Tubes containing DNA go into the automated storage system ready for investigators to use in studies.

WEB LINK

To learn more about BioVu, please visit www.mc.vanderbilt.edu/vanderbiltmedicine for a podcast.



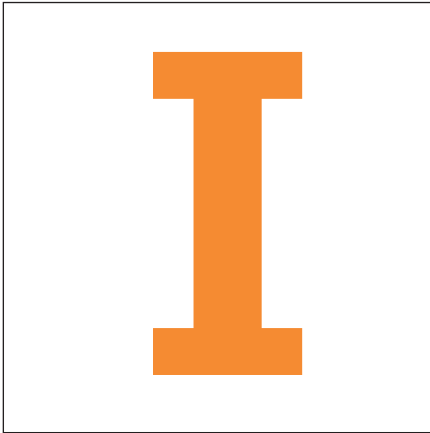


It's hard to imagine a walk to raise funds for BRAF-positive cancers. But in the future, cancer may no longer be a disease known primarily by its tissue of origin – breast cancer, colon cancer, lung cancer. Instead, it may be classified by the genetic mutations that drive it.

As the view of cancer shifts, so will cancer therapy.

“Cancers of the same genetic abnormalities should be treated the same whether they come from the skin or the colon or the lung,” says Jeffrey Sosman, M.D., director of the Melanoma Program at the Vanderbilt-Ingram Cancer Center. “I think that’s a concept that is really going to change our approach to treatment.”

WRITTEN BY **LEIGH MACMILLAN**
ILLUSTRATION BY **DAN PAGE**



Increasingly, physicians will “look at the genetic makeup of a patient’s tumor and use that information to select therapy,” says William Pao, M.D., Ph.D., who is leading the new Personalized Cancer Medicine Initiative at Vanderbilt-Ingram. Pao is putting into place the systems that will make personalized cancer medicine – matching targeted cancer drugs to a tumor’s genetic changes – a routine part of clinical care.

TREATMENT TODAY

How will this new view of cancer change treatment?

Right now, oncologists consider both the patient’s characteristics and the cancer’s characteristics (tissue type, stage) to plan therapy.

But it’s not an exact science. Chemotherapy treatments are often a one-size-fits-all approach – sometimes they work, and sometimes they don’t. In general, patients receive a course of chemotherapy and then wait – up to six weeks or longer – to find out if the drug is having an effect. If it doesn’t appear to be killing the cancer cells, the doctor and patient will decide on another treatment option. In the meantime, the patient may have suffered the unpleasant side effects of chemotherapy, without any benefit.

Rita Quigley knows this approach first-hand.

In the summer of 2007, she noticed a mosquito bite-sized bump under the skin on her upper arm. She mentioned it

to the dermatologist she was routinely seeing because of a malignant melanoma (skin cancer) that had been removed from her back 17 years earlier. There was nothing visible on the skin, and the dermatologist had trouble even feeling the bump, Quigley recalls.

She requested that the mass be removed. The pathology report came back with ominous news: melanoma.

CT and PET imaging scans revealed that she had tumors in her lungs, and Quigley’s Huntsville, Ala., oncologist referred her to Sosman at Vanderbilt-Ingram.

Malignant melanoma that has metastasized to distant sites in the body is notoriously difficult to treat.

“Melanoma has been the most frustrating of solid tumors,” Sosman says. “There have been some positive results with various therapies in a small minority of patients, but the great majority of patients do not respond to the chemotherapy or immunotherapy treatments that we have.”

Sosman opted to treat Quigley with the chemotherapy drug dacarbazine. Quigley says she was fortunate to suffer only mild discomfort – achiness and flu-like symptoms – during the three months of chemotherapy (an intravenous infusion once every three weeks). The lung tumors didn’t shrink.

At the end of October 2007, thoracic surgeon Eric Lambright, M.D., at Vanderbilt-Ingram removed her lung tumors. The surgery was successful.

But a follow-up scan several months later showed new tumors in Quigley’s pelvic area, and Sosman decided to treat her with interleukin-2, an immunotherapy aimed at stimulating the patient’s immune system to kill the cancer. For the interleukin-2 treatment, Quigley was hospitalized for five days while the medicine was administered every eight hours around-the-

clock through a central venous catheter. After one week of rest at home, the treatment was repeated. Hospitalization is required because the side effects of interleukin-2 treatment can be severe.

“Interleukin-2 is a different ballgame. It was several weeks after the second treatment before I felt like myself again,” Quigley says.

Six weeks after the treatment, imaging scans showed no tumor shrinkage.

A year had passed since Quigley first noticed the bump on her arm. She had been through two surgeries, two grueling treatments, and still the cancer persisted.

TARGETED THERAPY

At this point, a door opened for Quigley – Sosman and his Vanderbilt-Ingram colleague Igor Puzanov, M.D., were studying a new drug in patients with metastatic melanoma. The drug, a “targeted cancer therapy” called PLX4032, had been shown in cell and animal testing to be effective against tumors that contained a particular genetic change in a gene called BRAF.

In 2002, investigators reported that about 60 percent of melanomas contained a BRAF gene mutation. The BRAF protein normally functions in a cell growth signaling pathway, and the mutation activated the pathway and caused cells in culture to behave like tumor cells.

“Everyone who read that paper said, this is a target for melanoma – if we can target BRAF, we’re going to see responses in melanoma,” Sosman recalls.

PLX4032, produced by Plexxikon and Roche Pharmaceuticals, not only targets BRAF, it specifically blocks the BRAF mutant most commonly found in melanoma.

Quigley’s melanoma had the mutation, and she enrolled in the Phase I clinical trial being led at Vanderbilt by Puzanov. Six centers participated in the trial.

Initial results were not stellar, Sosman recalls, but a reformulation of the drug allowed the investigators to achieve higher doses and “all of a sudden, everybody

started seeing responses.” He remembers the striking images that investigators at the various centers shared electronically.

“It was really stunning. Some of the patients were responding incredibly quickly, and we even saw symptomatic improvement – patients who were sick when they started, got the drug, and felt much better. That’s something I’ve never seen in treating patients with melanoma,” Sosman says.

Quigley started taking PLX4032 in August 2008. Her tumors have shrunk, and she continues to take the pills daily, with minimal side effects. She felt well enough to return to work as a part-time nurse in a pediatrics practice, after seeing her second of three daughters off to college.

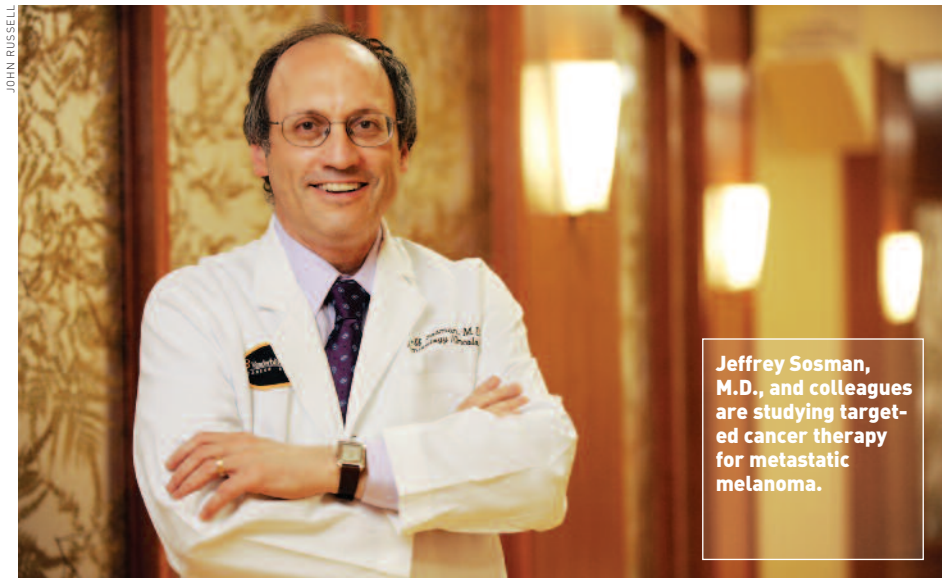
She has the highest praise for Sosman and his colleagues and finds it “amazing that it’s a possibility” to have a medicine selected to fit her tumor.

“I feel very blessed; I’m very thankful,” Quigley says.

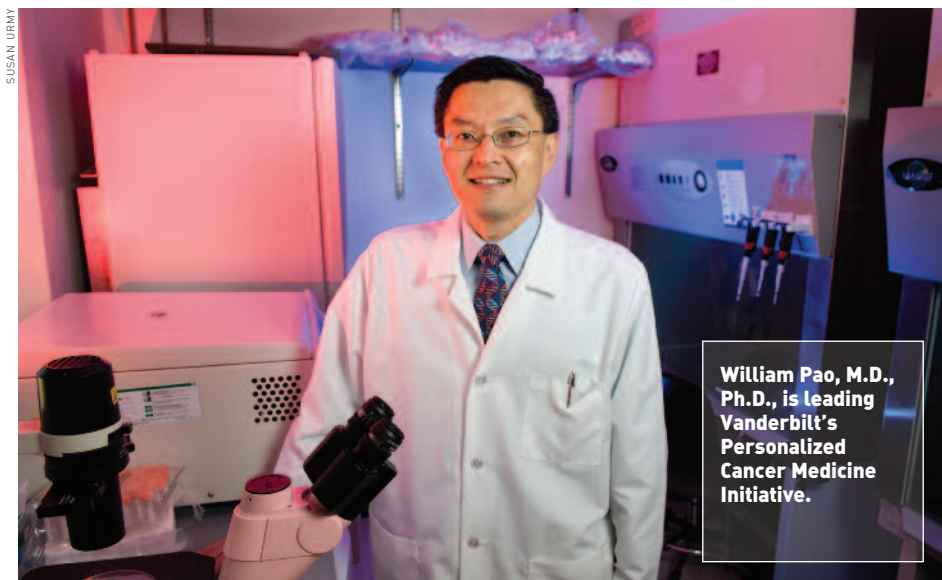
Puzanov presented initial findings from the Phase I trial at last year’s annual American Society of Clinical Oncology conference. Of 16 patients with BRAF-positive melanoma, more than half had their cancer shrink by at least 30 percent. Patients without the mutation had no response to the drug. The investigators extended the Phase I trial to include additional patients, and they have launched Phase II studies, which will treat between 90 and 150 patients at 12 centers. Sosman is leading the Phase II trial.

“The world of melanoma treatment has changed,” Sosman says. “It’s really very exciting to treat patients whose tumors have the right genetic profile with this drug and expect them to respond, and for the most part they do.”

The BRAF mutation targeted by the PLX drug also is present in other cancers, Sosman points out. It’s present in almost half of thyroid cancers, about 10 percent of colon cancers, and up to 6 percent of lung cancers. A trial under way in colon cancer patients with the mutation is showing response rates similar to the melanoma studies.



Jeffrey Sosman, M.D., and colleagues are studying targeted cancer therapy for metastatic melanoma.



William Pao, M.D., Ph.D., is leading Vanderbilt’s Personalized Cancer Medicine Initiative.

LOOKING FORWARD

Pao, whose research has focused on tailoring therapies for lung cancer, is working to make personalized cancer medicine a routine part of clinical care. At Vanderbilt-Ingram, which he joined last year, he says he has found a culture of collaboration and “an openness to new ideas and trying new things that might improve patient care.”

With the aid of Cindy Vnencak-Jones, Ph.D., and colleagues in the

Department of Pathology’s Clinical Molecular Genetics program, Pao is developing a platform to test for multiple genetic mutations at the same time.

The goal is to develop tests for between 30 and 50 mutations. Pao and colleagues are “mining” databases of reported mutations, in order to build melanoma and lung cancer-specific panels. The mutations they select for testing will have relevance with respect to existing or emerging targeted therapies. Later,



Patient Rita Quigley benefited from participating in a study of PLX4032, which blocks the genetic mutation most commonly found in melanoma.

JOE HOWELL

they will develop panels to detect mutations specific to other cancer types.

The results of the tests will need to be integrated into the electronic medical record with algorithms that aid physicians in assigning therapies. Vanderbilt is a world leader in medical informatics, and Dan Masys, M.D., professor and chair of Biomedical Informatics at Vanderbilt, and his colleagues are working on the informatics needs.

“Many cancer centers are trying to move this kind of tumor genotyping and therapy planning forward, but the big question is how to do that in the most efficient manner,” Pao says. “I think that Vanderbilt has the right strengths to really make this happen.”

The initiative is being supported by the Robert J. Kleberg, Jr. and Helen C. Kleberg Foundation and an anonymous foundation. Foundation support is especially important, Pao says, because it is difficult to gain National Institutes of Health funding for “nuts and bolts” implementation efforts like this.

Ultimately, Pao thinks that using genetic measurements to guide therapy decisions will become routine, something that we won’t even call “personalized” anymore.

But he is quick to acknowledge that we’re not there yet.

We still need the results of ongoing efforts that are defining the genetic mutations in cancers – particularly those muta-

tions that drive tumors, Pao says. We need more and better drugs to hit those targets. We need to understand how tumors that initially respond to targeted medicines become resistant – something Pao and his colleagues have done for lung cancers that become resistant to the targeted therapies Iressa and Tarceva – and use that information to identify new targets and new drugs.

Despite the hurdles, Pao is excited.

“The pace of discovery is increasing and we’re going to be able in the next five to 10 years to routinely assign therapies based on the genetic makeup of patients’ tumors.”

And we’ll head out to the park to walk in support of our friends living with BRAF-positive cancers. **VM**

THE PATH TO PERSONALIZED LEARNING

On Bonnie Miller's to do list: dismantle the 100-year-old medical education system.

"We can't change the way we provide care without also changing the way we educate providers. It simply won't work," said Miller, M.D., senior associate dean for Health Sciences Education. "In the world of personalized medicine, there will be no way that one provider can know everything needed for every patient encounter every time, but medical education is still built on this assumption of the omniscient doctor."

Miller and colleagues plan to introduce a new pilot program this fall that will build a culture of inter-professional teams while introducing students to the fundamental principles of professionalism and health care systems. The pilot program reflects a shift from autonomous, individual practitioner-based care to care delivered by very large teams of individuals.

"When a patient gets admitted to Vanderbilt, even for a brief hospitalization, there will probably be upward of 50 people who are working together to do the right thing at the right time, to deliver what he needs in terms of diagnosis and therapy, to monitor, feed and take care of him. A very small number of them are physicians. The care team has a minority of physicians involved. And everyone needs to be on the same page and executing as a team," said Dan Masys, M.D., professor and chair of the Department of Biomedical Informatics.

The pilot program will include first-year nursing, medical, social work and pharmacy students. Six students from each discipline will arrive on campus a month before their classmates to participate in an immersion course that focuses on understanding the U.S. health care system and the context in which all health care providers work,

including local health care systems and community resources. At the same time, they will learn fundamental teamwork skills and basic patient care skills.

"By working and learning in teams from the beginning, the students will gain an understanding of how the different professions evolved, what their foundational ethics and philosophies are and how each contributes to patient care," Miller said.

Upon completion of the immersion course, students will be assigned to a clinic either at Vanderbilt or in the community where they will work in supervised teams two half-days a week.

"This program will focus on community and population-based health so that our graduates will be able to care for individuals and populations at the same time. This is a key skill in improving practice outcomes," Miller said.

The students will continue to take core sciences classes, and their clinic days will be built into their elective time. The success of Vanderbilt's medical student-run community clinic, the

Shade Tree Clinic in East Nashville, is a springboard for this portion of the pilot program.

"We know students are capable of delivering high quality care in teams as long as they are well supervised," Miller said.

"Personalized medicine is not the only reason we need a different way of educating providers. We have a tremendously complex health care system and we can't simply hope that individual physicians will figure out on their own how to make systems work," Miller said.

"Our students must learn about systems in order to constantly improve them, so that consistently outstanding, up-to-date care is given to every patient every time.

"We have to change education to support a new way of practicing."

- KATHY WHITNEY

VUSM student Brett Donegan, left, and John Pitts, M.D., (MD '09) treat patient Harry Western at the Shade Tree Clinic.



SUSAN URRY



ROOTING OUT



Heart

DISEASE

WHEN BROKEN HEARTS
RUN IN THE FAMILY

WRITTEN BY **JESSICA PASLEY**
ILLUSTRATION BY **DIANA DUREN**

Lynetta and Gary Anderson adopted sisters Jesi and Krysi with only one stipulation from their birth family – the girls remain in contact with their natural grandmother. It's a decision the Andersons say saved their oldest daughter's life.

The girls' grandmother, Connie, knew she needed to tell the Andersons about the hereditary heart ailment called hypertrophic cardiomyopathy (HCM) that took the life of her 15-year-old son, placed her daughter on the heart transplant list, and as she later discovered, was the cause of a host of unexplained deaths on her husband's side of the family.

Armed with the information that their

daughters' medical history was concerning, the Andersons, who live in Columbia, Tenn., brought them to the Monroe Carell Jr. Children's Hospital at Vanderbilt shortly after the adoption in 1997 when they were 6 and 3 years old. At that time everything checked out fine.

Thankfully, Connie was one step ahead of them all.



efore the girls were adopted, I started writing letters to our kinfolk,” Connie said. “Everywhere I could find a relative who could tell me some kind of history of this heart problem I wanted to hear from them. I did a lot of research.

“There had just been so much death, and I had lost my son. I just knew this was something I needed to do to help these girls and to help the family who was going to be raising them. I think I made it my mission, and I am glad for it.”

Both girls were followed by Ann Kavanaugh-McHugh, M.D., assistant professor of Pediatrics. For years their cardiac evaluations were normal.

But in 2008 Jesi’s routine EKG and echo of her heart showed some abnormalities. Because of the extensive family history, the girls were immediately referred to the Center for Inherited Heart Disease at Vanderbilt University Medical Center.

The clinic, opened in 2006, is a joint effort of Vanderbilt Heart and Vascular Institute and the Division of Pediatric Cardiology at Children’s Hospital to

identify families with inherited cardiovascular disease as well as provide genetic screening, counseling and preventive care to family members at risk.

Because a variety of heart and vascular diseases are inherited, they can affect multiple members of a single family, who might not be aware that they carry a gene mutation that puts them at increased risk for heart failure or sudden cardiac death. According to the center, hypertrophic cardiomyopathy affects up to one in 500 people, but in a family with the mutation, the risk increases to one in two.

HCM is the No. 1 cause of sudden cardiac death in young athletes. It causes the heart muscle to thicken, which can obstruct blood flow to the heart with symptoms of dizziness, fainting and shortness of breath. The biggest concern – without proper diagnosis and treatment, those affected by the disease will die suddenly, without warning.

Jesi underwent a cardiac MRI, which showed a significant area of thickening that was not seen in earlier tests. A blood test followed. It showed she carried the gene mutation that had afflicted many in her birth family. The teen received an implantable cardiac device (ICD) or defibrillator that would shock her heart if her rhythm were to become erratic, preventing sudden death.

“When tests showed that the muscle was starting to be a little more thickened, the news was overwhelming to all of us,”



ANNE BAYNER

Lynetta Anderson said. “Before any of this, I don’t think we understood how serious the disease was.

“It was good to see that Vanderbilt was focused on taking care of her. It is amazing that they are able to find this kind of thing out.”

Charles Hong, M.D., Ph.D., co-director of the Center for Inherited Heart Disease, said the name of the game is preventive medicine.

“Our goal is to catch people before they develop symptoms, before we hear murmurs,” said Hong, assistant professor of Cardiovascular Medicine at Vanderbilt. “Family history is vital for diagnosis and prevention. Unfortunately, many physicians do not routinely think about family

history. The grandmother, in this case, really saved the day.

“The fact that we had the family history was very relevant to this case. Jesi had an abnormal EKG and having a mother with HCM, an uncle who died from HCM, a grandfather, aunt and cousins with the disease, it was pertinent.

“If we had not had this information, then Jesi’s EKG may not have even been performed.”

Jesi, now 18 and a freshman at Columbia State University, was told she could no longer participate in competitive sports. She also carries an increased risk of passing the disease on to her children. Her younger sister, Krysi, 16, showed no genetic mutations of the disease.

Sisters Krysi, left, and Jesi Anderson underwent testing at Vanderbilt’s Inherited Heart Disease Clinic where it was discovered that Jesi has hypertrophic cardiomyopathy.

Vernat Exil, M.D, assistant professor of Pediatric Cardiology and co-director of the clinic, said Jesi’s prognosis is good, and she should have a relatively normal life.

“She has very strict instructions for activity, but the ICD allows us to monitor her. Quite frankly, it is there to prevent her from dying. And that is the purpose of the clinic – to help people, to save lives. Because we have a genetic counselor, we are able to provide much-needed

Because a variety of heart and vascular diseases are inherited, they can affect multiple members of a single family, who might not be aware that they carry a gene mutation that puts them at increased risk for heart failure or sudden cardiac death.

guidance to both the affected and non-affected family members.

“We have come a long, long way in determining the gene defects that cause HCM, but we still have a ways to go. We still don’t know all of the genes that are involved. We still don’t understand how individuals with similar gene defects can have different heart findings (some normal, some abnormal).

“We are, however, in a better position compared with five to 10 years ago as we are able to gather cohorts of families, which may help further our understanding of this major cause of early unexpected death.”

Hong added: “Genetic testing is fundamentally different from routine blood tests, so we really need to evaluate the entire family to do this right. We are

often finding genetic changes that have never been described before, so having cohorts of families enrolled in our clinic helps to determine whether a particular genetic change is the cause of the disease or an innocent bystander.

“In Jesi’s case, we actually found a pair of rare mutations in the same gene that had been described only once previously, but we found the identical pair in her birth mother, so we knew we had found the culprit,” Hong said.

Jesi’s grandmother continues to urge other family members to be tested so that they can stop the disease from wreaking havoc on their family.

“When all of this started, no one had a name for the disease,” said Connie. “If I had any clue, if I had known that my children needed to go to a cardiolo-



AUTISM: PIECING TOGETHER THE GENETIC PUZZLE



A multi-center team, including investigators in Vanderbilt’s Center for Human Genetics Research, has identified the first common genetic variation associated with autism.

The findings, reported in *Nature* and in the *Annals of Human Genetics*, point to a particular spot in the genome that may increase a person’s risk for the neurodevelopmental disorder and suggest the involvement of molecules that form connections between brain cells.

Autism is characterized by impaired verbal communication and social interaction, and by restricted and repetitive patterns of interest or behavior. It is part of a spectrum of disorders (ASD) that can range from relatively mild to quite severe and affect as many as one in 150 children in the United States, about three-quarters of them boys.

Evidence from twin and sibling studies has demonstrated that autism has a strong genetic component, but despite many attempts to find genetic risk factors, “there is no consensus on the underlying genetic architecture of the disorder,” said Jonathan Haines, Ph.D., director of the Vanderbilt Center for Human Genetics Research (CHGR) and a co-author of both studies.

Haines and longtime collaborator Margaret Pericak-Vance, Ph.D., director of the Miami Institute for Human Genomics at the University of Miami, conducted a genome-wide association study

(GWAS) to search for common genetic variation that increases susceptibility for ASD. Common genetic variants are spots in the genome where a variable letter of the DNA code – called an SNP (single nucleotide polymorphism) – is present in at least 5 percent of the population.

The researchers examined 1 million SNPs in a discovery dataset that included 1,390 individuals from 438 autistic Caucasian families. They identified 96 SNPs as being strongly associated with autism risk. Using an independent validation dataset of 2,390 individuals from 457 autistic families, and analysis of 550,000 genetic markers, the investigators narrowed the list of potential autism risk SNPs. Two of the top 96 SNPs resided in a region on chromosome 5p14.1, which the researchers examined more closely, finding eight SNPs that associated with autism in this region.

Investigators at the Children’s Hospital of Philadelphia performed a GWAS on two additional datasets (one 780 family-based group and one case-control group with 1,204 cases and 6,491 controls). James Sutcliffe, Ph.D., a CHGR investigator and co-author of the *Nature* paper, provided additional Vanderbilt samples to the Philadelphia group.

That analysis also identified the 5p14.1 chromosomal region as containing common genetic variants associated with ASD. **VM**

— LEIGH MACMILLAN

gist, their lifestyles would have changed. I would have known what to look out for. But that is where I made sure my granddaughters were cared for.”

Although Jesi and Krysi had a clear family history of this potentially life-threatening condition, many families are blindsided by the information – like the Osbornes of Nashville.

The instant the doctor walked into the exam room, Teresa Osborne knew that the news was not going to be good.

What began as a routine sports physical for her then-14-year-old daughter, Katie, was taking a turn for the worse. During an annual physical, in 2006, Katie’s pediatrician detected a heart murmur. The family was referred to Exil at Vanderbilt for further testing.

“Parts of that day are such a blur,” recalled Teresa Osborne. “But I clearly remember that Dr. Exil was heartbroken to have to pass that kind of news along to us. He spent hours talking and discussing things with us.

“He was so kind and compassionate. A big part of [Katie’s] life was being taken away from her. She had tears in her eyes and was just sitting there.”

Still in shock, the family quickly called Katie’s sisters. They, too, would be tested for the gene. Osborne said it was not as surprising when doctors discovered that Katie’s oldest sister, Clare, also carried the mutation. Thankfully, Sarah, the middle sister was mutation free.

“When I was first diagnosed with HCM at the beginning of the eighth grade, I was devastated because my life had always revolved around sports,” said Katie, now 17. “I was unsure of what I would do without being able to participate in the [sports] I had previously.”

For the first year after her diagnosis, Katie was closely monitored and placed on a beta blocker. It wasn’t until her freshman year of high school in 2007 that symptoms of HCM began to surface.

“Although she was restricted from participating in sports, I noticed that with some activity she seemed to be hav-

ing some difficulty,” said Osborne. “I could see that something just wasn’t right. One day she was coming up the stairs and when she reached the top, she was dizzy. She just didn’t look right. I called Dr. Exil.”

Katie was admitted to Children’s Hospital that night. It was determined that she would need a septal myectomy – an open heart surgery to remove the thickened muscle that was blocking blood flow. Soon after her recovery, she also received an ICD.

Now two years later, the junior at Ensworth High School has found interests in other activities including bowling and photography.

“I am used to the precautions I have to take, and I know I have to be careful not to do anything that I am not supposed to,” said Katie. “However, I still try to live as normal as any other teenager. I try not to let it control my life.

“Thanks to my HCM, I have found out I really enjoy bowling, and I love photography and those are things that you can do for the rest of your life. So, although it stopped me from doing things I loved, it opened doors to whole new opportunities that I may not have ever experienced.”

Clare, who was diagnosed with a milder form of the disease while in college, also had a period of adjustment.

“At first I gave up pretty much all working out,” admitted Clare, 23. “But after time passed, I realized that I missed what I used to do and started walking and doing other physical activities that wouldn’t put me at increased risk for sudden cardiac arrest.

“For me, it took a while to get used to knowing that I had this illness; however, once I did, I don’t let it affect me anymore. But I will say it was hard at first.”

A 2009 Vanderbilt graduate, Clare works as a research assistant in the Vanderbilt Institute of Imaging Science with hopes of attending medical school. She is followed by her cardiologist and takes a calcium channel blocker to minimize symptoms.



SUSAN URBAN

Joan Vick, left, and her daughter, Teresa Osborne, both carry the gene for hypertrophic cardiomyopathy. Teresa’s daughters, Katie (left) and Clare (right) inherited the disease, while Sarah, center, did not.

Since her daughters’ diagnoses, Osborne discovered that she, too, carries the gene, as does her mother and sister. None of them have shown symptoms of the disease.

“We have not been able to trace it any further back than that,” said Osborne. “But now that we know, we are going to have to be vigilant about it when my girls have children. It is better to have the knowledge and be prepared than be caught by surprise. It helps you prepare your children for what to expect rather than have to step back (from activities they already love).

“My hope for my girls has not changed,” said Osborne. “I still want them to find the things that make them happy and be successful at it. I don’t want them hindered by it, but I am so glad it was discovered before something tragic happened.” **VM**

BlackBerry

To:

Cc:

**Subject: Time 4 ur
meds**

If check ur sugar now
u won't worry later.

NEXTEL

how r u?

::: Taking Care of a Population One Patient at a Time :::

WRITTEN BY **KATHY WHITNEY**
PHOTOGRAPH BY **JOE HOWELL**

Famed clinician William Osler, M.D., once said, “It is much more important to know what sort of a patient has a disease than what sort of a disease a patient has.”

This is a favorite quote of Tom Elasy, M.D., director of the Vanderbilt-Eskind Diabetes Clinic, and associate professor of Clinical Research and Medicine. In the United States diabetes affects 24 million people or 8 percent of the population. While all diabetics share a common problem, the inability to regulate glucose, the way the disease affects them is impacted by myriad outside influences.

Recognizing that personalized medicine is really about the person, the Vanderbilt-Eskind Diabetes Clinic has developed several initiatives directed at caring for the individual patient from the inside out.

“Diabetes is a common, complex condition that has so far eluded our ability to achieve goals that we know would make a significant difference in the lives of individuals. Despite some decent data about the importance of controlling glucose, much of which was developed here at Vanderbilt, we’ve not been able to do that,” Elasy said.

Diabetes is further complicated by being a chronic disease that requires a good amount of effort after the patient leaves the doctor’s office. Patients must check their blood up to five times a day, monitor carbohydrate and nutrient intake, dose insulin according to what they eat, log their numbers, and plan ahead for prevention. All the while, they may be dealing with depres-

sion, job loss, marital trouble and any number of stressors.

“Too often caregivers have shrugged their shoulders and said, ‘there’s not much we can do.’ Increasingly, we’re being more creative about tending to that other aspect of care. It requires a lot of work outside the office, and we don’t control that. I think we’re seeing more and more folks trying to take ownership for that. It’s a joint model of care with the patient,” Elasy said.

At the foundation of that model are several initiatives designed with various patient populations in mind.

::: Teaching Tools

Russell Rothman, M.D., assistant professor of Internal Medicine and Pediatrics, has studied low literacy as an important barrier for patients. Some Vanderbilt studies have found that about 25 percent of diabetes patients have less than ninth grade literacy skills, and about two-thirds have less than ninth grade math skills. “We have been performing numerous studies demonstrating the challenges that many of our diabetes patients face, and designing tools to improve how we communicate and educate our patients with diabetes,” Rothman said. This has included training providers with the Diabetes Literacy and Numeracy Education Toolkit (DLNET). This toolkit includes more than 24 chapters that can be used in educating patients with diabetes and poor literacy or numeracy skills. Providers can use different sections of the toolkit as they see fit.

“We have been performing numerous studies demonstrating the challenges that many of our diabetes patients face, and designing tools to improve how we communicate and educate our patients with diabetes.”

::: Your Avatar Will See You Now

With 46,000 patient visits to the Vanderbilt-Eskind Diabetes Clinic each year, there is more demand than there are exam rooms. Oftentimes, a patient needs information from his physician or nurse but does not require a face-to-face interaction. Second Life is a three-dimensional virtual world where patients create a visual model of themselves (an avatar) and par-

ticipate in a simulated appointment with a virtual nurse practitioner. The software is currently in development to create different scenarios using the 3D graphics and incorporate video of high-fidelity simulators. Second Life will provide what video streaming and e-mail exchange cannot: a richer, interactive experience. “Second Life will supplement, not replace, the individualized care we give our patients,” Elasy said.

::: Time 4 UR Meds

Children with type 2 diabetes are often diagnosed during adolescence — at the same time that they are transitioning into adulthood, testing boundaries and taking more risks. So they are diagnosed at a time when they may be less responsive to dealing with health problems, particularly those that they may not see as an immediate threat to their health.

While their diabetes may not always be on their minds, their phones are usually in their hands. Shelagh Mulvaney, Ph.D., assistant professor in the School of Nursing and Department of Pediatrics, and Kevin Johnson, M.D., professor and vice chair of Biomedical Informatics, are conducting a new study to look at using text messaging to prompt children and teens regarding self management and



Longtime Vanderbilt patient, Cleo Viola Hayden, never wanted people to know that she couldn't read. Studies have shown that those with low literacy levels and diabetes can struggle with reading prescriptions and following doctor's recommendations, have poorer knowledge of their disease, and suffer worse clinical outcomes.

+++++ Blood sugar control related to math, not African-American race

Diabetes management can be severely hampered if the patient is not good at math, according to a new Vanderbilt Medical Center study published in the September 2009 issue of *Diabetes Care*.

The findings from Chandra Y. Osborn, Ph.D., M.P.H., lead author of the paper and an assistant professor of Medicine in the Center for Health Services Research and Prevention and Control Core of the Diabetes Research and Training Center (DRTC), may also help explain some racial differences in diabetes control.

African-Americans have been found to have worse blood sugar control and higher rates of complications, such as heart disease and kidney failure, than whites do, and Vanderbilt researchers now report that it is a diabetes-related numeracy issue as much as a racial difference.

“We were looking to see, first and

medication. Mulvaney is evaluating the timing and content of the messages, which could be a generic reminder or a motivational message created by the patient.

::: One-stop Shopping

Diabetes care at Vanderbilt entered a new era with the opening of the Vanderbilt-Eskind Diabetes Clinic in 2005. The clinic offers comprehensive outpatient care for both adults and children with diabetes, including subspecialty visits, social work, nutrition and allied health services all under one roof.

The clinic is named for the late Irwin B. Eskind, M.D., (MD '48, HS '51) a retired Nashville physician and philanthropist who died from complications of diabetes. Its establishment is due largely to the generosity of the Eskind family who

envisioned a more patient-friendly model of diabetes care.

As a diabetic himself, Eskind knew how inconvenient it is to have to go to five to six clinics to get care.

At the Vanderbilt-Eskind Diabetes Clinic patients can see physicians from nine different subspecialties in the same place. The clinic also is designed to provide a "seamless transition" from pediatric to adult care for adolescent patients when they turn 18.

"If we are going to improve both individual and population care, it is incumbent upon us, I think, to know the patient that we serve as much as we understand the disease," Elasy said. **VM**



Tom Elasy, M.D., director of the Vanderbilt-Eskind Diabetes Clinic.

ANNE RAYNER

foremost, whether or not there was an association between African-American race and poor glycemic control, which is a finding that has been consistently shown," Osborn said.

"Once we did that, we wanted to see whether or not one's health literacy skills, general numeracy skills, and/or diabetes-related numeracy skills accounted for that relationship. This has never been looked at before. Based on our findings, I would say that knowing how to use and apply numbers to manage your diabetes is more important than your race."

Vanderbilt researchers administered a diabetes-related numeracy test to 383 adults with type 1 and type 2 diabetes to gauge their ability to interpret nutrition labels, count calories and carbohydrates and keep track of medication doses.

They found that patients with the strongest diabetes-related numeracy scores also had better results on their

A1C test, which estimates a patient's average blood sugar level over the past three months.

"If you have diabetes there are certain skills that you need," Osborn said. "You need to be able to know ranges of numbers, you need to be able to know that a blood glucose level of 120 is less than 150, you need to know how to count carbohydrates, calculate portion sizes, read food labels."

"It really requires basic skills, add and calculate ... and even, oftentimes, multiplying numbers to be able to know exactly, based on the portion size amount, how many carbohydrate grams are in that serving of food."

Russell L. Rothman, M.D., M.P.P., and colleagues in the Prevention and Control Core of the DRTC have created a numeracy sensitive diabetes education toolkit that aims to help individuals learn how to control their portion sizes, learn how to count carbohydrates, and learn

how to read food labels at a very basic mathematical level.

"We haven't tested whether or not the toolkit reduces disparities in blood sugar control, but potentially, given what our finding was in *Diabetes Care*, this would suggest that if we are able to overcome the barrier of poor diabetes-related numeracy then this actually would be able to minimize the disparity that we see between African-Americans and whites in their blood sugar control," Osborn said.

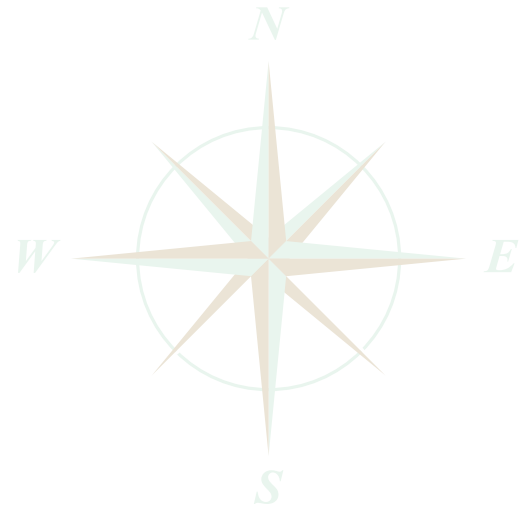
"If we develop tools geared toward overcoming that barrier, simplifying that information and the numerical demands on patients, or educate them in a way that math doesn't become a barrier to understanding, then it would make sense that we would be able to reduce that disparity." **VM**

- CRAIG BOERNER

Charting a New Course

NOTED NEUROSURGEON STEPS DOWN

WRITTEN BY CAROLE BARTOO
PHOTOGRAPH BY JOE HOWELL



George Allen, M.D., Ph.D., would have made a great ship's captain. An avid collector and reader of historic maps, he is well recognized for the way he steered the Department of Neurological Surgery for 25 years. Equally impressive is the care and concern he gave to selecting his crew. "The question was always what was best for the department," said Allen, the William F. Meacham Professor and Chair of Neurological Surgery. "Our culture is the bedrock of this department, which is also true for Vanderbilt University. We consider our department, including the support staff, to be an extended family."

Allen stepped down as chair on Jan. 1, although he will remain a member of the senior faculty and will serve on the School of Medicine admissions committee. Reid Thompson, M.D., his first mate and protégé, is the new chair of the department.

Allen invited Thompson, a cerebrovascular surgeon, to come to Vanderbilt in 2002.

"It's quite unusual for someone in an academic setting and in a surgical department to really pour himself into mentoring like he has done with me," Thompson said. "It will be a privilege to follow Dr. Allen in leading this department."

In a quarter-century of work, Allen has instilled in the department his own values: truth, collegiality and democracy.

"As far as chairmen of neurosurgical

departments, he is quite unusual," said Oran Aaronson, M.D., assistant professor of Neurological Surgery and associate director of the department's residency program. "When I was interviewing for a residency slot, Dr. Allen was the only program chair who said he would schedule an interview at my convenience. No one else did that. And he called me himself. It meant a lot to me."

A number of faculty, including Aaronson, say Allen's culture of collegiality is the reason they have stayed with the department. While many medical departments run strictly from the top down, Allen always believed in involving his crew.

"About four years ago a national rule greatly reduced residents' hours," recalled Peter Konrad, M.D., associate professor of Neurological Surgery and Biomedical Engineering. "Dr. Allen sat everyone down and talked about the difficulties ahead. The rule was something that we saw at the time as adverse, but by the end of the meeting he had rallied the whole group around embracing the rule and making it work. That's a true leader."

"He always involved me in every interview with residents and potential attendings. He'd talk with me about which residents would work best with which nurses," said Cindy Brown, R.N., who managed Allen's operating rooms and worked in Neurosurgery with Allen for 23 years. "I had a waiting list for

nurses trying to get into Neurosurgery, because of the camaraderie."

Allen believed that the serious business of Neurosurgery required that he select and prepare his physicians to weather a rigorous workload. To do that, they had to be free of unnecessary stress and be supportive of one another. So, he planned annual picnics, weekend boat trips, and a softball league. At the base of the department's social functions was Allen's requirement that the team get to know and trust one another.

Allen built the department from a one-man operation in 1984 to 13 full-time faculty, 14 residents and four post-doctoral researchers. He oversaw the creation of five subspecialty programs. He graduated 45 residents during his tenure.

"I asked myself if my daughter Katie (now a first-year student at Vanderbilt University School of Medicine) were to ever need a neurosurgeon, would I recommend one of my residents to do it. If I wouldn't let a resident take care of my daughter, I wouldn't let him graduate," Allen said.

In addition to spending untold hours in the operating room with some of the most difficult cases in the region, Allen was an active researcher. He oversaw the development of a drug Nimodipine, which reduces the risk of stroke after aneurysm surgery. It is still the standard of care today.



Allen's love of cartography and map collecting inspired another of his great achievements – the first pre-surgical skull markers for surgical navigation.

“Different scans have different references making it very difficult to pinpoint landmarks. What we came up with was a lot like GPS for operating within the skull,” said Allen, who worked with bio-engineers and information technology experts to develop the markers.

Yet, even as he steered his department through an incredibly productive and successful era, Allen kept an eye on the future. With great patience and forethought, Allen charted what he hoped

would be a course for the future of his department upon relinquishing the chairmanship.

“George Allen hired Reid Thompson with the idea of this leadership succession plan,” said R. Daniel Beauchamp, M.D., J.C. Foshee Distinguished Professor and Chair of the Section of Surgical Sciences. “Once Reid got here and started working, it was clear he would be such a leader and could take on the role, so that it will be a very smooth transition.”

Allen asked Thompson to become vice-chair of the department in 2004 and introduced him to Vanderbilt leaders. Thompson was making a name for him-

self as director of the Vanderbilt Brain Tumor Center at the Vanderbilt-Ingram Cancer Center, medical director of Inpatient Neurosurgery, and a participant in the development of a Clinical Neurosciences Institute at Vanderbilt.

By the time Allen was ready to announce he was stepping down, Thompson was the overwhelming favorite to succeed him.

“Dr. Allen's legacy is the large number of outstanding neurosurgeons he has trained who now work all over the country and the world,” Beauchamp said.

Allen, who is married to Shannon L. Hersey, M.D., associate professor of Clinical Anesthesiology and Pediatrics, says he carefully plotted his own trajectory to slow when he felt ready for it. He turned 68 in January and is looking forward to visiting two daughters who are away at school, and to spending more time with Katie at Vanderbilt.

“I also love to cook, so I will be doing a lot more cooking for my wife and myself,” he said.

Like any good ship's captain, he knows when it is time to steer toward calmer waters, but navigating the brain will always be of interest to him.

“I hope to start a research project understanding how the brain controls various ball games such as golf and basketball,” Allen said. **VM**

PRESIDENT'S LETTER

Dear Canby Robinson Society Members:

The Canby Robinson Society (CRS) has a rich history of superb leadership, and Kitty Murfree's vision and dedication over the past two years have impacted our ability to continue to reach new members and capture the imagination of those who have been part of the CRS family for many years. It is with great humility and enthusiasm that I step into the role as president of the CRS, and I look forward to building upon the legacy of past presidents and volunteer leaders.

CRS recently conducted a tour of the new Critical Care Tower, which provided our members and guests with a greater understanding of the impact that state-of-the-art facilities have on the care of our patients and how these facilities also meet the needs of their families.

In the coming months, the Canby Robinson Society Scholarship Selection Committee will review a slate of incredibly talented and accomplished medical school applicants and then host the candidates during the medical school's "Second Look Weekend."

As CRS president, I will work closely with members of the Coalition for Canby Robinson Society, whose role is to identify new supporters for the many educational programs and discovery initiatives that have propelled Vanderbilt's standing among the elite medical centers in the world. We look forward to reaching out to individuals throughout the region, sharing with them the many touching stories of superb patient care, impactful teaching and mentoring, and groundbreaking biomedical research. Among these individuals are many who have benefited from care at

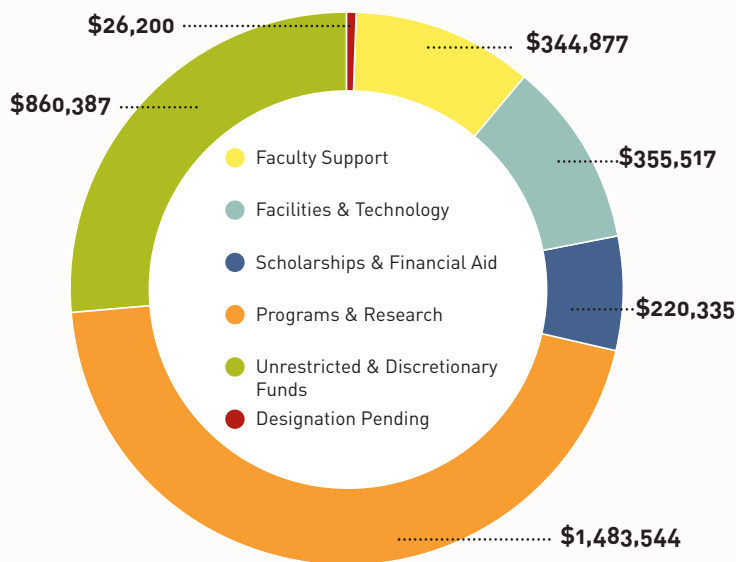
Vanderbilt, either personally or through friends and family members, and have a desire to give back.



Paul Sternberg, M.D.
Canby Robinson Society president

FY09 Giving by Active Canby Robinson Society Members

Gifts under \$25,000



COLLECTIVE GIVING SUPPORTS MEDICAL CENTER PROGRAMS

Individuals who give to Vanderbilt University Medical Center often do so for very personal reasons:

- A passion for educating the next generation of physicians
- A desire to help eliminate childhood cancer
- A commitment to support their alma mater early in their career

Together, this community of donors shares a connection through the Canby Robinson Society and a passion for the Medical Center. The impact of their giving is significant.

For the university's fiscal year 2009, for example, gifts between \$1,000 and \$25,000 totaled nearly \$3.3 million. Donors designated research efforts and other programs to benefit from 45 percent of that giving. Scholarships, faculty support, facilities and technology needs were met by donors at this level, as were other areas to which discretionary funds were directed.

In a year when many families and organizations carefully considered their philanthropic priorities, this collective giving showed a vote of confidence in the Medical Center.

ATTIC FULL OF MEMORIES LEAVES LASTING LEGACY

Helen and Wallace Engles thought they had retired. That is, until 2005, when Helen was named executor of her cousin, Jacquelyn Turner's, estate.

In addition to the usual house, land and bank accounts to be distributed, the Engles faced the huge task of sorting through an attic full of baseball memorabilia and other valuable collectibles to be sold at auction. Jacquelyn's father, Jim Turner, was a Major League Baseball player.

"We were up in that attic for a year," laughed Helen. "We found all kinds of sports memorabilia. We even found the girls' autograph books from when their father started in the big leagues!"

The Engles catalogued the items and worked with auction houses and other dealers to sell them. "We even sold things on eBay," Wallace said.

Their stewardship of Ms. Turner's estate paid off. According to her wishes, the estate came to Vanderbilt to endow two chairs – the Jacquelyn A. Turner and Dr. Dorothy J. Turner Chair in Diabetes Research, established in 2007 and held by Alan Cherrington, Ph.D., and a new chair in cognitive disorders whose holder has yet to be named. The new chair is to be called the Jim Turner Chair in Cognitive Disorders.

Jacquelyn was a diabetic all her life, and Jim Turner had dementia in his later years.

"Because of her health, and because of Jim's health, Jackie wanted the money to be given to Vanderbilt," said Helen, a retired educator and Vanderbilt alumna (VU '46). "She saw the need to help, especially with diabetes research."

Known as "Milkman Jim" because he worked in his family's dairy in the off-season, Jim Turner debuted in the major leagues in 1937 with the Boston Braves,



"They loved Vanderbilt and the opportunities it gave them," their cousin said. "They had decided together that they wanted their money to go to Vanderbilt."

went on to pitch for the New York Yankees, and finished his career as a pitching coach for the Yankees and Cincinnati Reds.

Jacquelyn (VU '52) and Dorothy Turner (VU '49, MD '59) were both Vanderbilt graduates who spent their lives helping others. Jacquelyn was a respected educator, teaching chemistry and coaching girls' basketball at Hillsboro High School. Dorothy was a physician, serving as a public health officer for the state of Tennessee. Neither of the sisters married nor had children.

"They loved Vanderbilt and the opportunities it gave them," their cousin

said. "They had decided together that they wanted their money to go to Vanderbilt."

Because of Jacquelyn Turner's gift, Vanderbilt faculty members will make significant contributions to science's understanding of diabetes and cognitive disorders. Although Ms. Turner died in 2005, the plans she made for her estate mean her family's legacy will continue to make a difference.

"I think Jackie would be very pleased and happy with how the money is being managed and spent. She was able to give back and help others, too," Helen said.

- MEREDITH CARR

CRS SCHOLAR THWING SAYS 'I DO' TO PUBLIC SERVICE CAREER

Julie Thwing, M.D., MD '02, came to Vanderbilt based on its reputation as one of the best medical schools in the country, but she did not know that her decision and her selection as a Canby Robinson Society (CRS) Scholar would help shape her career path in public service.

The CRS scholarship allowed Thwing the opportunity to pursue an interest in international medicine and public health without the financial burden usually associated with medical school. The experience proved more than a financial boost to her career, however.

"The Canby Robinson Society was more than a scholarship," she said. "The Canby Robinson Society is a group of people who care for you and truly want you to succeed. I had the great fortune to be mentored by Dr. Judson Randolph, (MD '53), while at Vanderbilt, and he remains a dear friend. I was very happy at Vanderbilt. It is a great combination of excellence and kindness."

Before coming to Vanderbilt, Thwing graduated magna cum laude

from Harvard with a degree in biology. It was at Vanderbilt that she began developing her future in medicine. She honed her interest in helping others, volunteering as a tutor for Somali Bantu refugees in Nashville and traveling to Africa and Haiti to help people who were battling tuberculosis and HIV.

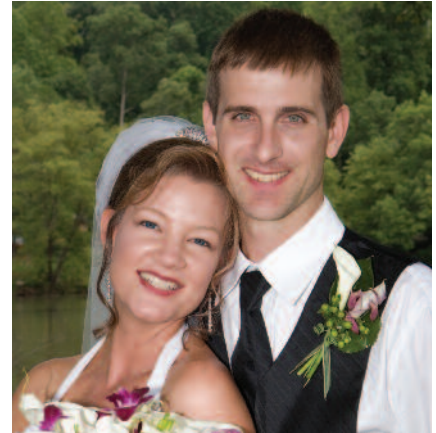
Thwing completed a residency in internal medicine and pediatrics at Vanderbilt from 2002 to 2006 before moving to Atlanta to train at the Centers for Disease Control and Prevention's (CDC) Epidemic Intelligence Service (EIS).

The EIS is a two-year post-graduate training program for health professionals interested in the practice of applied epidemiology.

"The EIS was originally created to train epidemiologists to recognize and investigate outbreaks, but it has evolved into the premier training program for epidemiology in the country," she said. While in EIS, she served in the Malaria Branch, supporting public health interventions and conducting research in Niger, Angola, Kenya and Madagascar.

Many current and former EIS officers are leading the investigation of the current outbreak of H1N1 influenza.

After completing the EIS training



program, Thwing remained in the CDC's Malaria Branch as a medical epidemiologist. Thwing, who is board certified in internal medicine and pediatrics, is currently providing technical support for the President's Malaria Initiative in Senegal, as well as supporting various research projects and malaria control initiatives.

Thwing misses living in Nashville, but admits that Atlanta is now "growing on her," especially with the recent changes in her personal life. In 2008, she married Ed Hopkins, an engineer at Georgia Tech Research Institute. "I am very happy and am enjoying married life," she said.

- JON COOMER

CRS SCHOLARSHIPS



The Canby Robinson Society has helped ease the burden of student debt through the CRS Scholarship Program.

Launched in 1987, the program provides full-tuition scholarships that, with satisfactory progress at Vanderbilt, continue for four years. The scholarships are awarded on the basis of demonstrated leadership and scholarship activities. Scholarship recipients are recommended by the dean of the School of Medicine and the chair of the Admissions Committee. Their recommendations are then forwarded to the Canby Robinson Society Scholarship Selection Committee for final approval.

The Society supports more than 25 scholars each year seeking M.D. and M.D./Ph.D. degrees. Of the CRS scholars who have graduated, two have been named Founder's Medalists among a host of other distinctions.

New 2009 CRS Scholars (front, left to right) Katie Collins, Lakshmi Sivarajan, Kristie Aamodt; (back, left to right) Michael Pelster, Jason Metcalf, Lauren Mioton.

IN BRIEF

EUNICE KENNEDY SHRIVER REMEMBERED

When President John F. Kennedy took office in 1961 and memorably invoked, “ask not what your country can do for you, ask what you can do for your country,” his sister, Eunice Kennedy Shriver took the message to heart. Vanderbilt University is but one of the many institutions to benefit from her altruistic efforts.

The Vanderbilt Kennedy Center for Research on Human Development is a Eunice Kennedy Shriver Intellectual and Developmental Disabilities Research Center (EKS IDDRC). It is dedicated to improving the quality of life of persons with disorders of thinking, learning, perception, communication, mood and emotion caused by disruption of typical development.

The Center now has 75 investigators doing groundbreaking research, a family outreach center providing resources and support and training programs to share the latest innovations.

Shriver, who died Aug. 11, 2009, at age 88, was a member of Vanderbilt’s Nicholas Hobbs Society and the Canby Robinson Society.

Shriver, along with her mother, Rose Kennedy, and husband, Sargent Shriver, attended the Convocation marking the Center’s founding on May 29, 1965. The Shrivers returned in 1996 to celebrate the Center’s 30th anniversary, and Mrs. Shriver made remarks praising its work.

“The John F. Kennedy Center at Peabody College has been unique among the 12 original Mental Retardation Research Centers in its emphasis on the behavioral, social, and educational sciences, especially special education, and in its training of young researchers in the behavioral sciences for careers in mental retardation research, a program dating back to 1955,” she said. “I congratulate the Kennedy Center for its accomplishments. I am certain that the next 30 years will be equally productive and impressive.”

- LESLIE HAST



ART AS HEALING

Donna Glassford, director of Cultural Enrichment, leads Canby Robinson Society members and guests on a tour of some of the Medical Center’s art collection. Cultural Enrichment programs confirm extensive evidence that engaging patients in art and music lightens the burden of illness.



FOND FAREWELL

Friends and colleagues gathered in October 2009 to show appreciation and bid farewell to Missy Eason, who served as CRS executive director for 11 years. (left to right): Fran Hardcastle, Kitty Murfree, Missy Eason, Elizabeth Proctor, Ann Price, M.D., and Lonnie Burnett, M.D.

web links

Please look for more photos online about the outreach tour of the new Critical Care Tower and the CRS scholar reception at www.mc.vanderbilt.edu/crs.

ANN H. PRICE, M.D.
Associate Dean for Alumni Affairs,
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VMAA Board of Directors

In September 2009, the Vanderbilt Medical Alumni Association (VMAA) Board welcomed the following new board representatives: Chloe Rowe, M.D., Jennifer Konopka, Ph.D., Kyla Terhune, M.D., Bonnie M. Miller, M.D., and Eddy Yang, M.D., Ph.D., who represents the newly formed Wilhelm Conrad Röntgen Society. Yang will begin his term in October.

The VMAA Board also voted to confer honorary member status on Kitty Murfree, former president of the Canby Robinson Society, who became the CRS's representative to the VMAA Board in January.

Vanderbilt Medical Alumni Reunion 2010

Our next VUSM Reunion is scheduled for Oct. 21-23, 2010, and will coincide with Vanderbilt University's reunion/ homecoming celebration. All medical alumni are invited to return to campus for VUSM Reunion 2010. The special anniversary class celebratory years are listed in the chart below. Please make plans now to attend and look for more information in the July issue of *Vanderbilt Medicine*.

REUNION 2010 SPECIAL ANNIVERSARY CLASS CELEBRANTS	
Quinq Plus	1959 and earlier
50th	1960/1961
45th	1964/1965
40th	1969/1970
35th	1974/1975
30th	1979/1980
25th	1984/1985
20th	1989/1990
15th	1994/1995
10th	1999/2000
5th	2004/2005

DynaMed Trial

VMAA offers a 15 percent discount on DynaMed, a clinical reference tool created for physicians and other health care professionals as a "point-of-care" reference tool. DynaMed is updated daily and monitors the content of more than 500 medical journals.

For more information about this trial, please contact Ann Price, M.D., at ann.price@vanderbilt.edu.

ProQuest Update

ProQuest Health and Medicine Complete is a 24/7 online resource offered through the VMAA at no charge to medical alumni. ProQuest is a popular tool for many of our VMAA members who do not have easy access to an academic medical library. If you are not currently enrolled and would like to explore the ProQuest Health and Medicine Complete database, please contact Ann Price, M.D., at ann.price@vanderbilt.edu to receive more information and login information.

Vanderbilt School of Medicine 2010 Alumni Directory

The VMAA is working with Harris Publishers to create a new VMAA print and CD directory. We anticipate delivery in summer 2010, well in advance of our medical reunion. All updates provided to Harris either electronically or via telephone will automatically be downloaded into the Vanderbilt database and will refresh your VUConnect profile (Vanderbilt's online community).

VMAA Web site

The VMAA Web site was recently updated and now includes helpful links to VUConnect, Facebook, Eskind Biomedical Digital Library site, and information on how to access the ProQuest database. We have also introduced a link to a VMAA/VUMC monthly calendar. Please visit the Web site at <https://medschool.vanderbilt.edu/alumni> for more information.

Submitting Medical Alumni News

Thank you for reading *Vanderbilt Medicine*, especially the class "Worthy of Note" section. If you have news or a photograph you would like to share with us, please e-mail medalum@vanderbilt.edu; or fax to (615) 936-8475; or mail to VUMC, 21st Ave., South and Medical Center Drive, MCN D-8212, Nashville, TN 37232-2106.

Ann H. Price

Read *Vanderbilt Medicine* online, and send in your alumni news at www.mc.vanderbilt.edu/vanderbiltmedicine. Digital photos (200-300 dpi and at least 4 by 6 inches) are always welcome and will be included as space permits.

KEY

- MD - Medical School Graduate
- HS - House staff
- FE - Fellow
- FAC - Faculty
- CF - Clinical Faculty
- * Indicates CRS member

50s

***Paul Barnett, M.D., MD '58, FAC '67-'03**, and his wife are working with veterinarians to bring to Nashville a state-of-the-art medical facility for animals, where they can get 24-hour care, particularly those that are seriously ill.

***Robert Dorton, M.D., MD '59**, received the Volunteerism and Community Service Award from the American College of Physicians - Missouri Chapter - for teaching second- and third-year medical students at St. Louis University School



***Oscar Beasley, M.D., MD '52** saved the negatives of his photographs over the years, and in his retirement is digitally scanning some of them. This 1977 photo shows Kirkland Hall in the background. Beasley and his wife, Betty, have five children, two of whom also live in Iowa City, home of the University of Iowa, which is where he did his residency in Internal Medicine. He was in private practice there from 1959 until 2002.

WEB LINK

To read an essay by William Fleet, M.D., MD '58, in which he reminisces about the second year of medical school, please visit www.mc.vanderbilt.edu/vanderbiltmedicine.

of Medicine where he is a clinical professor in Internal Medicine.

Richard Lester, M.D., MD '53, HS '54, writes that his daughter, Patricia Lester, M.D., is an assistant professor of Child and Adolescent Psychiatry at UCLA where she is the director of the FOCUS program, which addresses stress-related problems among military families.

Marvin Schwartz, M.D., MD '55, retired to Los Altos, Calif., after practicing Urology for 34 years.

George Scott, M.D., MD '52, a gastroenterologist, lives in Santa Barbara, Calif., and has enjoyed conducting interviews for prospective Vanderbilt University freshmen for the last four years.

***Walter Stone, M.D., MD '57**, recently published "Contributions of Self Psychology to Group Psychotherapy: Selected Papers of Walter Stone" (Karnac Books). He also welcomed his 11th grandchild and second grandson, Nathaniel Stone, in August.

60s

Robert Alford, M.D., MD '61, HS '66-'67, FAC '67-'86, retired as chief medical officer at Centennial Medical Center in Nashville after 22 years. He is an active member of the Board of Faith Family Medical Clinic. He and his wife, Marceleen, and their three sons, Stephen, Andrew and Daniel, are doing well. Stephen and his wife, Saana, recently adopted a baby girl, Madelyn.

Robert Carey, M.D., MD '65, FE '70-'72, completed his term as president of the Endocrine Society in June 2009. He is immediate past president and chair of the society's Advocacy and Public Outreach Core Committee. In May 2009 he received the Robert Tigerstedt Distinguished Scientist Award of the American Society of Hypertension. Carey is the David A. Harrison III Distinguished Professor of Medicine; Dean,



(left to right) - ***Jim Callaway, M.D., MD '56, HS '60-'64**, ***Henry Callaway, M.D., MD '54, HS '54-'55**, ***John Boldt, M.D., MD '54, HS '54-'59**, ***Carl Grote, M.D., MD '54** and ***Swan Burrus, M.D., MD '54, HS '54-'58** gathered in San Antonio, Texas, in July 2009 to celebrate Boldt's 80th birthday and to attend a reception. The John Wesley Boldt, M.D., Chair in Gynecology is honoring the establishment of University of Texas Health Science Center in San Antonio where Boldt continues to provide patient care and guidance to medical students and residents.

Emeritus of the School of Medicine and University Professor at the University of Virginia. Carey's son, Robert Josiah, entered medical school at the University of Virginia in fall 2009.

***Thomas Chesney, M.D., MD '69, HS '69-'70**, president of the Pathology Group of the Midsouth, was recognized as the dedicated and distinguished honoree at the American Cancer Society's fundraising Zodiac Ball, held at the Peabody Hotel in Memphis.

Chesney is board certified in Dermatopathology and Anatomic and Clinical Pathology. He is also director of laboratories at Baptist Memorial Hospitals and a professor of Dermatology and Pathology at the University of Tennessee College of Medicine.

***Michael Clarke, M.D., HS '69-'71**, and William Sistrunk, M.D., HS '90-'93, were honored by the Springfield, Mo., Area Chamber of Commerce with their 2009 Salute to Health Care. Clarke is founder

worthy of note

Oscar Crofford, M.D., MD '55, emeritus professor of Medicine at Vanderbilt, was named Honorary Member of the European Association for the Study of Diabetes for lifetime achievement in the field of diabetes research. The ceremony was held recently in the Palais Liechtenstein in Vienna, Austria. Crofford made major contributions to the design, funding, conduct and translation of the Diabetes Control and Complications Trial (DCCT). This landmark study proved that strict control of the blood glucose will prevent or slow progression of the vascular complications that damage the eyes, kidneys, nerves and heart of people with Type 1 diabetes. Crofford and his wife, Jane (BN'57), continue to manage their cattle and timber farm in the Ozarks of North Arkansas.



Andrew Bell Benedict III, VU '66, submitted this composite photo of the Vanderbilt Pharmacy School class of 1904. His grandfather was a member of the class, pictured in the second row, third from the left. Vanderbilt's School of Pharmacy existed from 1879-1920. It was a small department, adjunct to the Department of Chemistry.

and president of Clarke Orthopedic Clinic. Salute to Health Care awards honor direct providers of health care services who have demonstrated leadership in making the Springfield area a healthier place. Honorees are recognized for going above and beyond the scope of their day-to-day jobs to improve the health of area residents, either by pioneering a health care field or by bringing about significant change in the way area health care is delivered.



Anthony Vine, M.D., MD '89, (center) from New York City, recently connected with **John Sawyers, M.D., HS '50-'58, FAC '61-'09**, and his wife **Julia Sawyers, M.D., MD '60, HS '61-'64**, in Florida.

Charles Emerson Jr., M.D., FAC '68-76, is working as an orthopaedic consultant for the Nashville VA Medical Center and Vanderbilt University Medical Center.

***Bill Goodson, M.D., MD '60, HS '60-'61**, has returned to part-time practice at the mental health center in Huntsville, Ala., after being retired for four years. A grandson, Hamilton, is also working in Huntsville, while a granddaughter, Emily Snowden, is president of her sorority at Vanderbilt University. Goodson and his wife, Elise, celebrated their 53rd anniversary in June 2009.

James Goolsby, M.D., MD '69, HS '72, practiced Cardiology in Austin, Texas, for 27 years and retired with his wife, Judi, to Santa Fe, N.M.

***John Hutcherson, M.D., MD '60, HS '64-'66**, is on the Board of Trustees for Central Methodist University in Fayette, Mo. He laments that there were only 21 days of skiing during the 2008-2009 season.

Larry Parrott, M.D., HS '60-'62, a retired surgeon, has been teaching for 15 years at the University of South Carolina School of Medicine. He and his wife, Joy, were blessed with their sixth grandchild, May Parrott Harrigan, on Sept. 5, 2009. He reports that he is playing golf again after successful cataract surgery.

Larry Scott, M.D., MD '69, HS '69-'72, has returned to the University of Texas Medical School in Houston where he began his academic career. He has assumed the role of director of Gastroenterology at the Lyndon Baines Johnson General Hospital, one of two hospitals in the Harris County Hospital District and a major teaching hospital for the medical school.

***Gerald E. Sullivan, M.D., MD '62**, is an ophthalmologist in Bowling Green, Ky. "Still plugging along giving good care for 40 plus years," Sullivan writes.

Robert White Jr., M.D., MD '65, lives in Ocala, Fla., and retired from his Ophthalmology practice in January 2007. His wife, Carley, passed away in August 2008. His son, Robert, is a senior analyst with the FBI. His daughter, Ashley, is a pharmaceutical representative.

70s

***Robert Bashinsky, M.D., MD '74**, celebrated the 2008 graduation of his daughter, Lisa Bashinsky, from Vanderbilt Law School. He and his wife also have two grandsons, Brannon, 5, and Grayson, 3, who are "true blessings."

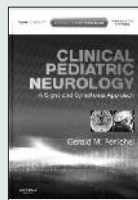
Sidney Bondurant, M.D., MD '71, HS '80-'83, an Ob/Gyn, is in his second term as a member of the Mississippi House of Representatives and is the only physician in the legislature. He will be running for re-election in 2011.

William Crump Jr., M.D., MD '79, is a family physician with the Trover Health System and serves as the Associate Dean for the University of Louisville Trover Medical School campus in Madisonville, Ky. Crump was presented the 2009 faculty award for Community Engagement, an honor bestowed on the faculty member who best puts into practice the concept of service learning. Crump was honored for his work with the Hopkins County



***James Finney Jr., M.D., MD '64**, grew this oak tree from an acorn taken from Vanderbilt's campus. He took custody of it 11 years ago when it was an 18-inch twig and grew it in a large tub for several years before transplanting it to Guntersville, Ala.

book focus



***Gerald Fenichel, M.D., FAC '69-present**, professor of Neurology and Pediatrics, has authored "Clinical Pediatric Neurology – A Signs and Symptoms Approach" (Saunders Elsevier).

worthy of note

Woody Van Meter, M.D., MD '79, has been featured in the documentary "Sight and Insight." When he received a call in 1986 to go on a medical mission to Baghdad during the Iran-Iraq war, Van Meter, who practices Ophthalmology in Lexington, Ky., seized the opportunity. For the past 23 years, he has traveled to a developing country where he performs sight-restoring corneal transplants on people in need. "Sight and Insight" is a half-hour documentary narrated by actress Ashley Judd that follows Van Meter from his roots in Bourbon County and his job teaching at the University of Kentucky to distant, dangerous lands like Sudan, Cuba and Syria. He says he never fears for his safety aboard the Orbis Flying Hospital, an international humanitarian operation dedicated to preserving and restoring sight in the developing world.

Community Clinic, his leadership in providing free school physicals in Mclean and Webster counties and for his work as the only provider of prenatal services in Caldwell County.

***James Gray, M.D.,** HS '76-'80, joined the Tennessee Department of Health, Upper Cumberland Region, as a primary care physician in January 2005. His special interest areas are family planning, breast and cervical cancer screening, colposcopy, diabetes management and women's health. His son, Chris, is a software engineer at Microsoft, Inc., and resides in Redmond, Wash., with his wife, Melinda. Gray's daughter, Janet, is an instructor in chemistry at Tennessee Tech University. She and her husband, Daniel, have two children, Emily, 4, and Sarah, 2.

Bruce M. Kauder, M.D., HS '79-'82, has published a book titled "Daddy Tell Me a Story About When You Were Little." Written for his daughters, the book includes a host of stories Kauder told his children when they were young. He retired from clinical practice in 2006 after developing lymphoma. Now a two-year bone marrow transplant survivor, Kauder documents his journey at www.caringbridge.org/visit/brucekauder.

Michael Sineway, M.D., MD '79, a pulmonologist, just hired a seventh full-time partner and has two offices north of Atlanta in Lawrenceville, Ga., and Duluth, Ga.

R. Bruce Williams, M.D., MD '77, was recently elected to his first full term as a member of the Board of Governors of the College of American Pathologists (CAP) and was sworn in at a ceremony held in Washington, D.C., on Oct. 10, 2009, at the College's annual meeting. Williams is a partner and executive committee member for several laboratories in Shreveport, La., including The Delta Pathology Group, LLC, Omega Diagnostics, LLC, and the Pathology Resource Network.

Daniel Winstead, M.D., MD '70, is president of the Louisiana Psychiatric Medical Association, first vice president of the American College of Psychiatrists and president-elect of the Southern Psychiatric Association. He lives in New Orleans, and has a 1-year-old grandson, Sebastian.

80s

Thomas Smiley Burgoon, M.D., MD '85, served as chairman of the 21st annual symposium of the American Academy of Medical Acupuncture in Fort Worth, Texas, in April 2009. It is the largest professional organization of physicians practicing acupuncture in the United States. In 2008, Burgoon was the keynote speaker at the International Symposium on Techniques and Clinical Applications of Acupuncture and Moxibustion in Beijing, China.

***John Jeffrey Carr, M.D.,** MD '89, has been inducted as a fellow in the American College of Radiology. The induction took place at a formal convocation ceremony during the recent 86th ACR Annual Meeting and Chapter Leadership conference in Washington, D.C. Carr is vice chair of Clinical Research and professor of Radiologic Sciences, Internal Medicine-Cardiology and Public Health Sciences at Wake Forest University School of Medicine where he specializes in cardiovascular imaging with CT and MRI.

Chris Cates, M.D., HS '82-'85, FE '86-'89, an interventional cardiologist at Emory University School of Medicine, was listed in the July 2009 *Atlanta Magazine* as one of Atlanta's top physicians. Cates holds honorary membership in the International Andreas Gruentzig Society. Gruentzig was the inventor of the coronary angioplasty procedure.

***Daniel James Diekema, M.D.,** MD '89, clinical professor, departments of Internal Medicine and Pathology at the University of Iowa Carver College of Medicine, is now a certified Diplomate of the American Board of Medical Microbiology. The ABMM certification is the

highest credential for doctoral-level microbiologists.

***Eddie Hamilton, M.D.,** MD '85, HS '85-'88, FAC '88-'00, is president-elect of the Tennessee Chapter of the American Academy of Pediatrics, effective Jan. 1.

William R. Macon, M.D., HS '84-'88, FE '90-'91, has been promoted to professor of Laboratory Medicine and Pathology at the Mayo College of Medicine. Macon serves as the head of the Lymph Node Working Group in the Division of Anatomic Pathology at the Mayo Clinic.

***C. Wright Pinson, M.D., M.B.A.,** MD '80, is the deputy vice chancellor for Health Affairs and CEO of the hospitals and clinics for Vanderbilt University Medical Center. He has oversight for all Vanderbilt patient care facilities and programs, both on campus and off, including Vanderbilt University Hospital, the Monroe Carell Jr. Children's Hospital at Vanderbilt, the Psychiatric Hospital at Vanderbilt, the Vanderbilt Clinics, Vanderbilt-Williamson County and Vanderbilt Health One Hundred Oaks. He remains president of Vanderbilt Health Services and serves as senior associate dean for Clinical Affairs, with continued responsi-

worthy of note



***Ming Robinson, M.D.,** VU '84, MD '88, HS '88-'92, was inducted into the Vanderbilt Athletics Hall of Fame in 2009. Robinson excelled as a swimmer and scholar in the pool and in the classroom with equal success. Considered at the time as the greatest swimmer in the school's history, Robinson arrived on the campus from California during an era when women's varsity athletics were in their infancy. She was an NCAA All-American ('81-'84), NAIA All-American ('81), Vanderbilt Female Athlete of the Year ('83, '84), captain of the swim team, and competed in four national championships. She helped the Commodores to an NCAA Division II championship while preparing for a career in medicine, graduating cum laude. She is now in private practice as an Ob/Gyn in Laguna Hills, Calif.



Sheela Bhat, M.D., MD '98, and husband, Kiran, are the proud parents of three children (from left) Anand, Pavana and Anita. Bhat lives in Pittsburgh and practices at Children's Community Pediatrics - Allegheny.

bility for the Vanderbilt Medical Group.

Barbara Buechy Rankin, M.D., MD '84, has a full-time family practice with Sutter Gould Medical Group in Stockton, Calif. She and her husband, **Brandon Rankin, HS '85,** are raising three children, ages 19, 17 and 11.

Gregory Shields, M.D., MD '80, HS '80-'83, FE '83-'85, lives in Dothan, Ala., where he is medical director at Southeast Alabama Medical Center. He completed the Iron Man Triathlon in Clermon, Fla., in 2006 and 2007.

Curtis Green Tribble, M.D., MD '80, has joined the University of Mississippi Medical Center as professor of Surgery. Tribble, a longtime thoracic surgeon, directed the LVAD/transplant team at the University of Virginia and later helped develop and lead the Lifeflow LVAD Project at the University of Florida. He is currently serving a six-year term as director of the American Board of Thoracic Surgery.

90s

Rudolph Agosti, M.D., MD '99, and his wife, Rhiannon, have a 2-year-old daughter, Siena Rose. He is working at the Veteran's Hospital in Brockton, Mass.

Suresh Antony, M.D., FE '94-'95, clinical professor of Medicine at Texas Tech University School of Medicine, was recently awarded the Decade of Service Award by the Texas Chapter of the American College of Physicians. Anthony has also served as chairperson of Polo for AIDS, an exhibition polo tournament held in El Paso to raise money for HIV/AIDS patients.

Carolyn Oats Ballantine, M.D., MD '99, is married, living in Raleigh, N.C., and practicing Psychiatry.

Craig Brener, M.D., MD '99, was recently appointed vice-chairman of the Department of Anesthesiology at the Kingston Hospital in Kingston, N.Y. Brener also serves as medical director for the Kingston Ambulatory Surgical Center and is an attending anesthesiologist for Cross River Anesthesiologist Services. He and his wife, Alyson, a freelance literary proofreader, just celebrated their fifth wedding anniversary. They have two children, Eric, 2, and Abigail, 10 months.

Katherine P. Brundage, M.D., MD '91, and husband, Dan, had a baby boy, John Andrew "Jack" Brundage, on Oct. 1, 2009.

Stephen Cina, M.D., MD '92, was recently elected president of the

Florida Association of Medical Examiners and chair of the Anatomic Pathology Cluster of the College of American Pathologists.

Gregory Esper, M.D., MD '99, is the director of General Neurology at Emory University in Atlanta. He and his wife, Christine, also a neurologist at Emory, have one child, Julianna, and welcomed a son, Nicholas James, in September.

Dirk Hamp, M.D., MD '91, HS '91-'94, a Wake Forest pediatrician, continues to volunteer with Embrace Uganda. Hamp teamed up with another North Carolina physician to find a way to get treatment for Patrick, a young Ugandan patient who was born with two major heart problems. It took two years, but in May the young man underwent surgery and Hamp reports that Patrick is doing well. For more information, please visit www.embraceuganda.org.

Jeff Holzbeierlein, M.D., HS '94-'00, is an associate professor of Urology at the University of Kansas where he has been since completing his fellowship in Urologic Oncology at Memorial Sloan Kettering Cancer Center. He holds the John W. Weigel Chair in Urology and is the director of Clinical Research and the Urologic Oncology Fellowship Program. He is the assistant editor of the *Journal of Urology*. He and his wife, Jill, have four children: Helen, 7, Max, 6, Cate, 5, and Louisa, 16 months.

Elizabeth Johnson, M.D., MD '90, was named chief medical officer at Martin's Point Health Care. She previously served as chief of Internal Medicine and Adult Urgent Care at the Kenmore Center, part of Harvard Vanguard Medical Associates, in Boston, Mass. She lives in Cumberland, Maine, with her husband, Dan Soroff, M.D., a cardiologist at Central Maine Medical Center, and their two children.

Thomas Meyer, M.D., MD '97, is a cardiologist in Lynchburg, Va. His wife, Sherri, is a corporate dietitian for Meriwether-Godsey. They have a son, Oakley Henry, who was born May 25, 2009. He joins big brother, Oliver, 2.

Jennifer Halpern Moore, M.D., MD '99, HS '99-'00, welcomed third child, Ethan Lucas Moore, who joins sister Grace, 4, and brother Matthew, 2. Moore is an orthopaedist in Nashville.

Tjuan L. Overly, M.D., HS '99-'01, was appointed clinical assistant professor at the University of Tennessee Medical Center in Knoxville in 2008. Overly recently celebrated his second wedding anniversary with wife, Sara.

Dipen Parekh, M.D., HS '98-'05, FE '99-'00, recently received a \$2 million endowment from the Doctor's Hospital at Renaissance in the Rio Grande Valley. Parakh is a former Vanderbilt Urology resident and Rotary Ambassador Scholar.

book focus



A. Scott Pearson, M.D., FAC '99-'00, '05-present, has published a new novel, "Rupture" (Oceanview Publishing). In this thriller, Pearson tells the tale of Eli Branch who, while investigating the suspicious death of one of his patients, uncovers an elaborate web of lies spun by his late father, a longtime professor of anatomy at Mid-South Medical College in Memphis. Instead of finding answers, Eli only finds more questions, and more victims, each meeting a sudden, violent end.

***Robert Rosenfeld, M.D., MD '94, HS '94-'99,** is in his fourth year at Skagit Valley Medical Center in Mount Vernon, Wash., where he is a general Ob/Gyn working with midwives and family practice. He served as chairman of the Ob/Gyn department at Skagit Valley Hospital for three years. His wife, Becky, is a skilled quilter and a volunteer on multiple hospital committees. Their son, Brad, is in the marketing department at Duckhorn Vineyards Winery in the Napa Valley. In his spare time, Rosenfeld continues to fly cast for steelhead and salmon and work in his yard.

William Sistrunk, M.D., HS '90, and **Michael Clarke, M.D., HS '69,** were honored by the Springfield, Mo., Area Chamber of Commerce with their 2009 Salute to Health Care. Sistrunk is an Infectious Disease specialist with St. John's Hospital. Salute to Health Care awards honor direct providers of health care services who have demonstrated leadership in making the Springfield area a healthier place. Honorees are recognized for going above and beyond the scope of their day-to-day jobs to improve the health of area residents, either by pioneering a health care field or by bringing about significant change in the way area health care is delivered.

Dennis Szurkus Jr., M.D., MD '98, is a full-time faculty Ob/Gyn for the residency program at Orlando Health and is an assistant professor at the University of Central Florida College of Medicine. His wife, Kristina, VU'95, an attorney, is serving as a law clerk for Judge Emmett Cox on the Federal 11th Circuit Court of Appeals. The couple live in Orlando with their son, Alexander, 2.

Jon Tilburt, M.D., MD '99, is employed at Mayo Clinic seeing patients one day per week and doing a range of research projects focused on defining and enhancing the role of patients' values in health care decision making. He and his wife, Jackie,



saving the lives of countless newborns. For example, he provided midwives in Aceh with \$7 bag mask valves and trained them how to use them. He is also the principal investigator on a project that builds incubators from car parts. He is determined to create inexpensive incubators and medical training in places like Meulaboh, Indonesia. Olson was recognized as one of the Scientific American 10 by *Scientific American Magazine*. He was recognized as one of 10 researchers, politicians, business executives and philanthropists who have recently demonstrated outstanding commitment to assuring that the benefits of new technologies and knowledge will accrue to humanity.

worthy of note

Kristian Olson, M.D., MD '98, is the program leader for the Global Health Initiative for Integration of Medicine and Technology, a nonprofit consortium of Boston teaching hospitals and engineering schools. For the past 20 years, he has dedicated much of his time and effort to bringing medical technology to developing countries with the hope of improving neonatal care. He has seen an alarming rate of stillborn deaths in his travels to Burma, Thailand and Darfur. He is focused on educating local health care providers on the use of less expensive medical equipment that has resulted in

have four children: Jonas, 8, Phoebe, 5, Scarlett, 3, and Henry, 6 months. They occasionally vacation with classmates **Jeremy (MD '99)** and **Laura (VU '99) Freeman** and enjoy seeing **Aaron DeVries, M.D., MD '99** when they go to "the cities."

Harrison Warner, M.D., MD '94, has joined Anatomic and Clinical Laboratory Associates of Nashville in the practice of Anatomic and Clinical Pathology and Dermatopathology. ACLA has provided inpatient and outpatient Pathology services to the Nashville/Middle Tennessee community for more than 30 years and practices at Baptist Hospital.

2000-
Yasmine Subhi Ali, M.D., MSCI, MD '01, FE '04-'08, FAC '09, is an assistant professor of Medicine at Meharry Medical College and assistant clinical professor of Medicine at Vanderbilt. She is director of Echocardiography and director of Preventive Cardiology at Meharry. She was recently named chief editor of the atherosclerosis section of eMedicine. She was named to the TennCare Pharmacy

Advisory Committee as a representative for the American College of Cardiology Tennessee Chapter.

Roberto Blanco, M.D., MD '05, completed a General Psychiatry residency at the University of North Carolina in June 2009, and received the Myron B. Liptzin, M.D., Award for Clinical Excellence. This is presented to the graduating UNC Psychiatry resident who has demonstrated the most outstanding potential as a clinician and compassionate dedication to patient care. Blanco will complete his fellowship in Child and Adolescent Psychiatry at UNC in June.

Cindy Chin, M.D., MD '06, is a Pediatric Endocrinology fellow at Oregon Health and Science University (Doernbecher Children's) in Portland, Ore.

Jeanette Chin, M.D., MD '04 and **Brian Chin, M.D., MD '04,** have moved to Salt Lake City, Utah, where Brian is doing a fellowship in Neuroradiology and Jeanette is an instructor in Ob/Gyn at the University of Utah. Jeanette plans to do a fellowship in Maternal/Fetal Medicine. They have a son, William, 4.



***John Proctor, M.D., FAC '90 - '00,** was designated a "Hero of Emergency Medicine" by the American College of Emergency Physicians (ACEP). Proctor, an emergency physician and Pediatric Emergency Medicine sub-specialist, serves as regional medical director for Team Health and is assistant clinical professor of Emergency Medicine for the University of Tennessee Health Sciences Center.



Alyssa Throckmorton, M.D., HS '02-'07, and Thomas Throckmorton, M.D., HS '02-'07, welcomed their daughter, Charlotte Emilie, on Aug. 13, 2009. They recently moved to Memphis, Tenn., where they are both in practice full time in breast surgery and shoulder and elbow surgery respectively.

Robin Hickman Fogle, M.D., MD '00, is in her second year with Atlanta Center for Reproductive Medicine where she is a reproductive endocrinology and infertility (REI) specialist. She is board certified in Ob/Gyn and REI. She is married to **Evander Fogle, M.D., MD '98.** He works for Resurgen's Orthopaedics where he specializes in shoulders, elbows and sports medicine. They have two sons, Fletcher, 4, and Alex, 2.

Anil Goklaney, M.D., MD '00, joined DeKalb Emergency Physicians in Atlanta, Ga., in March 2009. He achieved partner status with C.E.P. America, one of the largest providers of emergency department management for hospitals.

***Patricia Chu Klap, M.D., MD '00, HS '00-'01,** married Guido Klap of

the Netherlands in Houston, Texas, in January 2009. Several VUSM alumni attended, including **Melissa Chen Myhre, M.D., MD '00, Adam Myhre, M.D., MD '00, Jason Lewis, M.D., MD '00, Aimee Martin, M.D., HS '00-'01, Kevin Toon, M.D., HS '98-'01, CP Krishnamurthy, M.D., HS '02-'05, Sara Habibian, M.D., MD '02, HS '02-'06, Lynn Bunch O'Neill, M.D., '01, Tom Kason, M.D., HS '99-'01 and Todd Bell, M.D., HS '00-'01.**

Theresa Larson, M.D., MD '05, is doing a fellowship in uveitis at the National Eye Institute in Bethesda, Md.

Amanda Nelson, M.D., MD '02, finished a fellowship in Rheumatology at the University of North Carolina and is now an assistant professor in the

Department of Medicine, Division of Rheumatology, Allergy and Immunology at UNC. She received the American College of Rheumatology (ACR) Distinguished Fellow Award at the organization's annual meeting held in October 2009.

Justin Piasecki, M.D., MD '02, works in Gig Harbor, Wash., where he is a plastic and reconstructive surgeon. He did a five-year Plastic and Reconstructive Surgery residency at the University of Wisconsin and then completed a Mohs surgery fellowship at the University of British Columbia. He is one of just a few plastic surgeons trained to perform Mohs Surgery, a treatment for skin cancer with same-day reconstruction. He lives in Gig Harbor with his wife and three young daughters. He continues to kayak recreationally and enjoys spending time outdoors with his family.

Elizabeth Pitchford, M.D., MD '04, HS '04-'07, and Clovis Pitchford, M.D., MD '04, practice Pediatrics and Pathology respectively. They live in Kensington, Md., and have a daughter, Josephine Anabelle, born Feb. 20, 2009.

Mona Potter, M.D., MD '03, is an attending child and adolescent psychiatrist at McLean Hospital and clinical instructor in Psychiatry at Harvard Medical School.

Airron Richardson, M.D., M.B.A., MD '05, finished his primary care sports medicine fellowship at Duke University Medical Center in June 2009. He completed an Emergency Medicine residency at the University of Chicago Medical Center the year prior. He has moved back to Chicago and accepted a position at the Methodist Hospitals in Northwest Indiana as an emergency physician. He will also be setting up a sports medicine practice.

Kelly Sawyer, M.D., MD '06, is a clinical instructor at Virginia Commonwealth University Hospital in the Emergency

Department. She is also the Emergent Cardiac Care fellow for the next two years. She will be enrolling in a Masters in Clinical Research and Biostatistics program through VCU.

Naveen Seth, M.D., M.B.A., MD '04, finished a residency in Emergency Medicine at SUNY Buffalo in June 2009 and has begun a one-year fellowship in EMS at SUNY Upstate in Syracuse, N.Y.

Selina Shah, M.D., MD '00, HS '00-'01, moved to the San Francisco Bay Area to join the Center for Sports Medicine in January 2009. She is the director of Dance Medicine and is involved in medical outreach to the underserved professional dance population. She co-authored a book chapter for the Team Physician Handbook. She married Michael Peri in May 2008.



Rima Rusnak, M.D., MD '02, welcomed daughter Elyse Lyla on April 6, 2009. She joins big brother, Joey, 3. Rusnak and her husband, Kevin, live in Cincinnati, Ohio, where she is working as a staff physician in the Cincinnati Children's Hospital Emergency Department. She is also the head physician for patient safety for the ED and an Urgent Care administrator.

***Edwin B. Anderson, M.D.**, MD '45, HS '47-'48, died May 29, 2009. He was 87. Dr. Anderson served in the Army Air Force at Maxwell Air Force Base. He entered private practice in Internal Medicine, which continued until 1985, when he accepted a position as medical director of Corporate Health Services and the Center for Health and Wellness at Baptist Hospital in Nashville. He retired in 1986. He is preceded in death by his wife, Anna Marie. He is survived by his children, Catherine, William and Edwin; five grandchildren; and three great-grandchildren.

John Christensen, M.D., MD '67 died June 13, 2009. He was 68. In 1976, Dr. Christensen opened a private practice in Anesthesiology at Saint Vincent's Hospital in Los Angeles where he also served as the hospital's chief of Anesthesiology. He is survived by his wife, Sumatra; children, Andrea and Victoria; and two grandchildren.

Worth Daniels Jr., M.D., HS '48-'50, died July 9, 2009. He was 84. After graduating from the Johns Hopkins School of Medicine in 1948, Dr. Daniels spent three years at Vanderbilt University Hospital and Thayer Veterans Hospital completing his internship and first-year residency in Medicine. He served as a physician in the Army Medical Corps at hospitals in Germany from 1951 to 1953 and established a private practice in 1958 in Baltimore where he remained until retiring in 1989. He is survived by his wife, Jane; two children, Ann and Jane; and three grandchildren.

Roger Moister Des Prez, M.D., FAC '63-'95, died Aug. 28, 2009. He was 82. Dr. Des Prez was chief of Medicine at the Veterans Administration Hospital in Nashville and professor of Medicine and Nursing, emeritus, at Vanderbilt University Medical Center. For 32 years he cared for countless patients as he supervised and mentored medical students, residents and physicians. He retired in 1995, but returned

to Vanderbilt in 1996 when he joined the faculty of Vanderbilt School of Nursing and was a preceptor at Vine Hill Community Clinic. He is preceded in death by his children, Sarah and Walter, and is survived by his wife, Patricia; children, Roger, Edward, Patricia, Julia and Eleanor; and eight grandchildren.

John Diehl, M.D., MD '47, died Aug. 20, 2009. He was 84. Dr. Diehl was a founding physician of Northridge Hospital and Medical Center in Northridge, Calif. He was a medical internist and served on the staff of Northridge Hospital when it opened in 1955 with 49 beds and a one-room ER. Before retiring in the late 1980s, he served as director of a number of nursing homes and was active in Rotary International and numerous service organizations. He is survived by his wife, Maurita; children, David, John and Paul; stepson, Bryan; and seven grandchildren.

Linda Fannon-Kaster, M.D., MD '81, died April 15, 2009. She was 53. She received her undergraduate degree from Centenary College in Shreveport, La. She married in December 1989 and left the practice of Pediatrics in 1996 to devote her time to raising her family. She is survived by her husband of 20 years, Tom, and her daughter, Colleen.

John Feely, M.D., FE '80-'81, died June 10, 2009. He was 61. Dr. Feely was a distinguished pharmacologist and academic at St. James Hospital and Trinity College in Dublin, Ireland. He pursued his higher professional training at Ninewells Hospital and Medical School in Dundee. He was awarded an international fellowship in Clinical Pharmacology in 1979, which enabled him to study at Vanderbilt University. He is survived by his wife, Deirdre; and children, Claire, Michael, Robert and John.

Fay Mary Gaskins, M.D., MD '56, HS '64-'69, FAC '92-'97, died April 22, 2009. She was 83. Dr. Gaskins

did a residency in Pediatrics in Long Beach, Calif., and returned to Vanderbilt in 1964 to complete a residency in Adolescent Psychiatry. She taught Psychiatry at Vanderbilt School of Medicine and worked at the Student Health Center from 1968-1990. She worked at the VA Hospital from 1991-1997, retiring as a Major. Dr. Gaskins is preceded in death by her daughter, Mary, and survived by children, Abe, Richard and Joe; and seven grandchildren.

***Elmore Hill, D.M.D.**, emeritus clinical professor of Oral Surgery, died April 20, 2009. He was 87. He graduated from Duncan Preparatory School and Vanderbilt University before going to University of Louisville Dental School. He interned at Johns Hopkins University and then trained in Oral Surgery in Chattanooga, Tenn., and Birmingham, Ala., before joining Edward Martin, M.D., in a practice lasting 45 years. He is survived by his wife of 54 years, Cynthia; children, Deborah, Elmore, John, Christopher and Tracey; and 10 grandchildren.

***Gordon Hollins, M.D.**, MD '59, HS '59-'61, died Dec. 12, 2008. He was 75. Dr. Hollins and his family lived in Harlan, Ky., where he joined the Daniel Boone Clinic in 1967. He served as a pediatrician for the children of Harlan County and the surrounding areas until his retirement in 1998. He was an avid outdoorsman who enjoyed nothing better than hunting grouse with his Brittany Spaniel at his side or fishing with his grandchildren. He is survived by his wife, Joanne; children, Gregory and Amelia; and three grandchildren.

Gerald Johnson, M.D., HS '53-55, died July 24, 2009. He was 88. Dr. Johnson operated his medical practice for more than 43 years in Winchester, Tenn., retiring in 1995. He was chief of staff for the Franklin County Hospital for 26 years. When he was not spending time with his family, he loved hunting, boating and visiting with

friends. He is survived by his wife of 52 years, Myra; children, Mark, Bryan, Kurt and Erik; eight grandchildren; and six great-grandchildren.

***M. Kenton King, M.D.**, MD '51, HS '53-'54, died Oct. 15, 2009. He was 84. Dr. King was appointed the first full-time dean of the Washington University School of Medicine in 1965 at age 40 after serving as acting dean for five months. He retired in 1989 as one of the longest-serving medical deans in the United States, as well as one of the most successful. Through his leadership and vision, in particular his instrumental role in recruiting new heads of all medical school departments, he shaped the course of the institution. Dr. King is preceded in death by his son, Michael, and survived by his wife, June; children, Doug, John, David and Tom; and eight grandchildren.

David Law IV, M.D., FAC '60-'69, died Aug. 22, 2009. He was 82. He served in the U.S. Army from 1945 to 1946. He received his medical doctorate from Cornell University Medical College in 1954. From 1969 to 1985 he served as chief of Medicine at the Albuquerque VA Medical Center and vice-chairman of the New Mexico School of Medicine. He moved to the Central Office of the Department of Veterans Affairs in Washington, D.C. in 1985 and held a variety of positions until 1996 when he became the associate chief of staff for education at the VA Medical Center in Bay Pines, Fla., until his retirement in 2002. He is survived by his children, Linda, Wendy, David, Kimberly and Cassandra; nine grandchildren and six great-grandchildren.

Joseph Lentz, M.D., MD '63, HS MD '63, HS '64, '68, FAC '68-'00, died Dec. 15, 2009. He was 71. Dr. Lentz was a Phi Beta Kappa graduate of Vanderbilt University ('59) and a member of AOA. He served his Pediatric training at Columbia Babies Hospital in New York and Vanderbilt, where he served as chief resident in 1967.

He served two years in the U.S. Air Force, and entered private practice with Eric Chazen, M.D., in 1968, founding Green Hills Pediatrics in Nashville. He was active in the American Academy of Pediatrics both nationally and in the Tennessee Chapter, where he served as president and was honored as Pediatrician of the Year. He is survived by his wife of 50 years, Betty; children Jody, Parish, Paul and Rob; and 10 grandchildren.

Richard L. Marks, M.D., MD '36, died April 1, 2008. He was 96. He served as an Army captain with the Medical Corps during World War II and then as a pediatrician in Park Ridge, Ill., for 51 years. He is survived by his wife, Bernice; children, Penny and David; and three grandchildren.

John Pickett, M.D., MD '43, died Sept. 12, 2009. He was 92. Dr. Pickett was a captain in the Army Medical Corps and served a tour of duty in Japan during the post war occupation. He lived in Amarillo, Texas, where he had a busy pediatric practice for 45 years. He served as president of the Texas State Pediatric Society, chief of staff of Northwest Texas Hospital and president of the Potter-Randall County Medical Society. He is preceded in death by his wife of 62 years, Doris, and survived by children, John, Steven, Judith and Carol; 11 grandchildren and four great-grandchildren.

John (Jack) Rawson, M.D., HS '65-'67, died April 15, 2009. He was 71. He served as a captain in the U.S. Air Force for two years, returning to University of Mississippi Medical Center for a fellowship in Newborn Medicine, eventually becoming director of the newborn nursery, a position he held until 1978 when he began private practice of Neonatology at Hinds General Hospital and Mississippi Baptist Medical Center in Jackson, Miss. Dr. Rawson is survived by his wife of 47 years, Mary; children, Katherine and Edwin; and five grandchildren.

***William Salmon Jr., M.D.**, MD '49, died Aug. 30, 2009. He was 82. Dr. Salmon was a medical officer in the armed forces for five years, a professor of Medicine at Vanderbilt, and served as assistant chief of the medical service and chief of the Endocrinology Section at the Nashville VA Hospital from 1957 to 1995. He is remembered for the discovery of somatomedin, one of the first growth factors studied in the laboratory setting. The William D. Salmon Teaching Award in Diabetes, Endocrinology and Metabolism at Vanderbilt was named in his honor. Dr. Salmon is preceded in death by his wife of 50 years, Jeanne, and survived by children Nancy, Susan, William and Robert; four grandchildren and one great-grandchild.

Stewart Smith, M.D., MD '42, HS '42-'43, died Oct. 26, 2009. He was 92. Dr. Smith began his pediatric practice in Chattanooga during the post-war baby boom, when making evening house calls, working in the office, and attending patients at the hospital were part of a routine day. He always enjoyed his work and his patients and considered himself fortunate to have a career and a profession that he loved. Dr. Smith is survived by his wife of 36 years, Cheryl; children, Stewart, Phyllis, Suzanne, David and Ruth Ellen; stepchildren, John, Lawrence, David, Ross, Peggy, Greg and Chesley; 12 grandchildren; eight step-grandchildren; and four great-grandchildren.

James Spalding, M.D., MD '45, died Sept. 16, 2009. He was 87. He served in the Army Medical Corps during World War II and reached the rank of captain. He worked for the Veterans Administration in conjunction with the Oklahoma University Health Science Center from 1969 until retiring in 1980 to enjoy his hobbies and to travel. Dr. Spalding was a member of the American Psychiatric Association and the Oklahoma Medical Association. He also enjoyed his time with the Full Gospel Business Men's

Fellowship meetings. He is survived by his wife, Ann; children, James and Nancy; step-children, Barbara, Bob and Mark; six step-grandchildren; and two step-great-grandchildren.

Charles Thorne, M.D., MD '49, HS '53-'56, FAC '62-'07, died Sept. 2, 2009. He was 84. "Charlie" was devoted to his patients and colleagues for 37 years. He was an associate professor of Medicine at Vanderbilt and established the Vanderbilt Employee Clinic in the late 1950s. His greatest career privilege was practicing medicine with the late Harrison Shull Sr., M.D., Paul Stumb, M.D., and Harrison Shull Jr., M.D. Upon retirement at age 69, Dr. Thorne worked as a physician at the Dayani Center until 2006. He is preceded in death by his wife of 63 years, JoAnn, and survived by children, Lucy, Nancy and Holly; nine grandchildren; and four great-grandchildren.

***Margaret Paxton Veller, M.D.**, MD '50, HS '50-'54, died July 27, 2009. She delivered more than 5,000 babies in the Natchez, Miss., community. Her friends and co-workers describe her as completely dedicated to her profession and to her patients. She was known for caring for patients despite their ability to pay. Dr. Veller was preceded in death by her parents, Derryl and Gladys Veller.

Dila Vuksanaj, M.D., FAC '98-'09, died Aug. 3, 2009. She was 54. She earned her M.D., from Stony Brook University and did her residency in Pediatrics at Long Island Jewish Hospital. She joined the faculty at Vanderbilt in 1998 where she was a pediatric anesthesiologist at the Monroe Carell Jr., Children's Hospital at Vanderbilt. Dr. Vuksanaj is survived by her husband, Jacques Heibig, M.D., and daughter, Jennifer.

Paul Winokur, M.D., MD '51, died July 19, 2009. He was 80. Dr. Winokur worked as a pediatrician in private practice in Cranford,

N.J., for 10 years and then served as chief of Pediatrics at Muhlenberg Hospital in Plainfield, N.J., for 25 years. He was also a distinguished professor of Pediatrics at the University of Medicine and Dentistry of New Jersey - Rutgers Medical School. He is survived by his wife of 55 years, Betty; children, Leslie, Mark, and David; and five grandchildren.

Harper Wright Jr., M.D., MD '47, died April 5, 2009. He was 85. Dr. Wright completed his Ob/Gyn residency at the University of Louisville Hospital. He served as a flight surgeon with the Navy during the Korean War. He joined Graves Gilbert Clinic in 1956 and was the primary Ob/Gyn serving Warren County, Ky., and was affiliated with the Medical Center at Bowling Green, Greenview Regional Hospital and Park Place Recovery Center in Bowling Green and Allen County War Memorial in Scottsville, Ky. He is survived by his wife of 68 years, Linda; children, Harper, Gail and Lynn; and nine grandchildren.

Charles F. Zukoski, M.D., FAC '61-'03, died Aug. 24, 2009. He was 83. Dr. Zukoski took part in performing the first kidney transplant at Vanderbilt University Medical Center in 1962 and helped position Vanderbilt as one of the nation's oldest and largest transplant centers in the country. He was recruited to Vanderbilt as an assistant professor of Surgery in 1961, where he spent seven years. After a one-year stint at the University of North Carolina, he went to the University of Arizona for the remainder of his career, retiring in 1995. He is survived by his wife, Elizabeth, and his children, Elizabeth, Charles, Robin and Ann.



RACHEL MORRIS



AMY GREATHOUSE



AMY GREATHOUSE

1) VMAA's Open House featured Robert Collins Sr., M.D. (MD '51, HS '52, '55; FAC '57-pres), and his book "Ahmic Lake Connections: The Founding Leadership of Vanderbilt University."

2) VMAA dinner Knoxville, Tenn., November 2009: (l-r) Mary LeMense, Gregory LeMense, M.D. (MD '89, HS '92), Linda Hatfield, R. Wayne Hatfield, M.D., (HS '01) and VMAA Board regional rep., W. Bedford Waters, M.D. (MD '74).

3) VMAA Scott Society dinner Chicago attendees (l-r standing): Erin Burke, Mohan Mallipeddi, Frank Zhao, Jash Datta, Chris Scally, John Scott, Kristy Kummerow; (seated): Emma Hamilton, Walter Wakwe, Alan Powers, Ravi Rajaram, Johanna Riesel.

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