

Vanderbilt Medicine

VANDERBILT UNIVERSITY MEDICAL CENTER

Fall 1999

On the frontier *of* fetal surgery

Also in this issue:

Clinical uses of angiogenesis –
to grow or not to grow

Sister Mary Diana –
from morning prayer to
morning rounds

Adults with once-deadly
childhood diseases

We Meet Again

ANNE RAYNER



Drs. Joseph Bruner (left) and Noel Tulipan were outnumbered at a recent Neonatal Intensive Care Unit picnic that brought 20 fetal surgery babies back to Vanderbilt. Turn to page 8 to learn more about the VUMC fetal surgery program that has been receiving national and international news coverage.

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Vanderbilt Medicine



On the frontier of fetal surgery **8**

A pioneering new fetal surgery program at VUMC offers hope.

FEATURES

A debt of love **4**

Sister Mary Diana Dreger begins her third year of medical school.

To grow or not to grow **18**

Vanderbilt scientists join others around the world studying the benefits of blood vessel development.



IN THIS ISSUE

Making the Rounds	2
Paddling at the Pan Am	7
Class of 2003	13
Part 2 : Stem Cell Research Establishing Boundaries	14
A Spirit That Soars	16
Your Health: Shirking Shingles	21
Alumni Journal	23
Longer lives	24
20th Century Giant	26
Book Corner	29
Vital Signs	30
Campaign Update	33
Annual Gifts	37

history revisits

Vanderbilt/Meharry Alliance

DEAN DIXON



BY HARRY R. JACOBSON, M.D.
Vice Chancellor for Health Affairs

The Class of 2000 has begun its final year of training and will be the last graduating class of the 1900s. It will graduate as one of the best educated, best prepared classes in the United States.

I t is sometimes surprising to remember that it has not always been so. Ninety years ago, at the dawn of the 20th Century, the modern history of the Vanderbilt School of Medicine began. Abraham Flexner, a brilliant young educator, produced a landmark study in 1910 that changed the face of medical education in the United States. The strength of American medicine, the profound breakthroughs in healthcare and the growth of the pharmaceutical industry can all find their antecedents in Flexner's work. It may come as some surprise to know that medical education in 1909 was dominated not by great universities but by trade schools. Flexner found in Tennessee a state that "protect[ed] more low grade medical schools than any other state in the South".

For Flexner, Vanderbilt represented the best of a bad lot. He recommended that Vanderbilt and Meharry Medical College comprise the groundwork of a new system of medical education in Tennessee and the South. While

Flexner's review of Vanderbilt was mixed, his praise for Meharry was high. Of the seven black medical schools at the time, Flexner singled out only Meharry and Howard University in Washington for support.

Ninety years later history is repeating itself as Vanderbilt and Meharry are once again forging a partnership to improve medical education and healthcare. The Vanderbilt/Meharry Alliance, under the direction of Dr. Cliff Meador (MD'55 and HS'59) has drawn national attention and recognition. Federal policy makers and funding agencies see the Alliance as a new and powerful tool in studying the health-care concerns of minorities. Meharry and Vanderbilt will build new programs in undergraduate and graduate medical training to enrich and expand the educational, scientific and clinical programs for both schools. The agreement specifically provides that both schools will remain independent with their own unique missions. We believe the alliance will help both Vanderbilt and Meharry achieve more through shared resources, programs and perspective. In November, the Mayor announced that Vanderbilt and Meharry in partnership would assume the operation and management of the Metropolitan General Hospital.

Abraham Flexner would be proud to look at medical education today and see the changes his 1910 study wrought. I like to think that he made the right call in supporting medical education here and at Meharry. The Vanderbilt/Meharry Alliance represents the best of what Flexner intended for medical education. ⑤

A
 M A N B E F O R E
 H I S T I M E



Abraham Flexner was an American educator and author who significantly advanced medical and science education in the United States. Although he was not a physician he was commissioned to write *Medical Education in the United States and Canada*, published in 1910 by the Carnegie Foundation for the Advancement of Teaching. The 346-page book became known simply as the Flexner Report

"Of the seven medical schools for negroes in the United States, five are at this moment in no position to make any contribution of value...Meharry at Nashville and Howard at Washington are worth developing and until considerably increased benefactions are available, effort will wisely concentrate on them."

- Abraham Flexner -



and is considered a landmark in American medical education, inspiring a revolution of teaching in American medical schools.

It resulted in the closing of many medical schools and the reformation of many others.

Flexner, a native of Louisville, Ky. and graduate of Johns Hopkins and

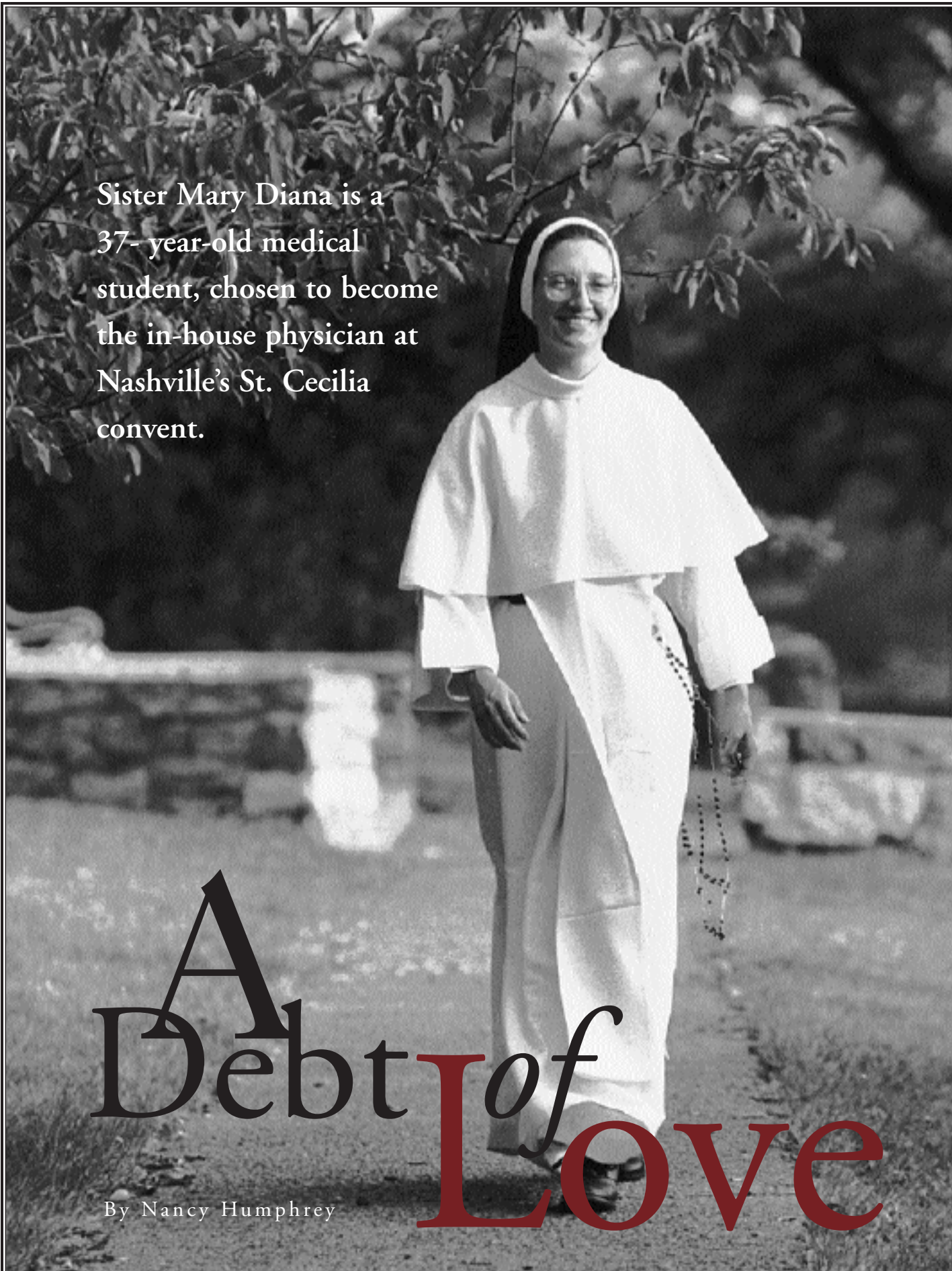
Harvard, never attended Vanderbilt but his ties to Vanderbilt were strong. His friendship with James Kirkland, Vanderbilt's second Chancellor — their summer homes in Canada were located one-fourth mile apart — strengthened his

knowledge of Vanderbilt and was perhaps one reason for the awarding of several major gifts to the medical school. The school received \$1 million from the Carnegie

Foundation in 1913 and \$4 million from the Rockefeller General Education Board in 1919.

The Flexner Report was the catalyst for the reorganization of Vanderbilt's medical school in 1920 by Dr. G. Canby Robinson, who many believe, was hand-picked by Flexner to leave Washington University for Vanderbilt.

Sister Mary Diana is a 37-year-old medical student, chosen to become the in-house physician at Nashville's St. Cecilia convent.



A Debt of Love

By Nancy Humphrey

High atop a hill near downtown Nashville, the Dominican sisters at St. Cecilia Convent rise each morning at five to pray.

Since July, one has been consistently absent.

Sister Mary Diana Dreger wakes long before 5 a.m., slips a white coat over her habit, throws a large, black bag over her shoulders, and drives to Vanderbilt University Medical Center to attend morning rounds with the pediatric team.

She is a 37-year-old, third-year medical student who joined the St. Cecilia sisters 10 years ago. In July, she began her clinical work at Vanderbilt Hospital, starting first with Ob/Gyn where she participated in an eight-week rotation.

The Dominican sisters are funding her medical education. When she graduates with the Class of 2001, she will do a residency in internal medicine, then will return to the Motherhouse to spend the rest of her life providing primary medical care for the 170 residents.

"It's kind of an investment for the community," Sister Mary Diana said.

The St. Cecilia sisters organized in 1860 in Nashville, to provide Catholic education for young women. The sisters range in age from 18 to 95. Some of them teach at other Catholic schools in other cities, but about 100 sisters live in the home, which has included an infirmary for decades. The Nashville-based sisters run and teach preschool to college students at Overbrook School, St. Cecilia Academy and Aquinas College in Nashville, as well as three parish schools in the Nashville area – St. Henry, St. Pius and St. Joseph.

Unlike most medical students, she will leave VUSM with no financial debt. But she carries a debt to her community.

"There are other debts I have that my classmates don't – such as already knowing 170 or so of my future patients are depending on me to do well in my studies now and to take good care of them in the future. Maybe that's a bigger debt, and an easier one because it's a debt of love."

Sister Mary Diana grew up Catholic in Long Island and never really decided not to go to medical school. Her enrollment was just delayed.

She was a pre-med student first at Cornell University, then SUNY/Stony Brook, but ended up in secondary education.

"I went into it very hesitantly but wanted to try it to see if I liked it. I knew if you were going to be a teacher, you had to love teaching. I also knew I would never make any money teaching which is a big joke at this point in my life."

Then she decided to become a sister, found the St. Cecilia community here, and joined them in 1989. She taught high school science at St. Cecilia Academy until she began medical school in 1997.

Sister Mary Diana said it is unclear how her job as the community's physician will evolve.

"I will somehow manage their health care. What all that will entail in the future, I don't know. A community of 170 sisters is not enough to keep any physician busy. As I'm going through medical school, I'm finding out more about the other kind of things that doctors do besides taking care of their patients. The possibility of doing some teaching is a very real one."

Sister Mary Diana said she has felt "very well received" by her classmates, although many of them did not know what to call her when they first met her.

"Obviously I don't do all the social kind of things the other students do, like going to parties. But I do participate in other activities with them, like histology tutoring and review sessions in the evenings. I feel like I know them fairly well and we work well together."

The reaction from her patients has been surprisingly unexciting.

"I'm really amazed at the patient reaction. I wasn't sure what to expect," she said. "The white coat seems to say a lot. When you see a white coat, it doesn't matter what's under it. It speaks to them of a health professional and in a hospital setting they expect that."

Sister Mary Diana said it has not been difficult separating her faith and her training. She sees them as a natural blend.

"Faith is such a part of what a person is. You can't turn off your spiritual button when you walk into the room of a patient. But on the other hand, it doesn't mean you're going to preach. If you ignore their spiritual being, which I think includes their emotional being, you're ignoring an important aspect of the patient." ♡

NCI study targets aspirin

by Cynthia Manley

The National Cancer Institute has awarded a multi-disciplinary group of scientists in the Vanderbilt-Ingram Cancer Center a major grant to learn more precisely how aspirin and similar drugs may play a role in preventing colon cancer.

The "chemoprevention" program project grant provides more than \$1 million during the first year, with an additional \$4 million in support recommended over the next four years. The grant is significant because it is the first to the VICC to be specifically earmarked for cancer prevention research. It is also among the first awarded by the NCI to support this kind of basic cancer research into so-called chemoprevention, the design of drugs to prevent cancer rather than treat it.

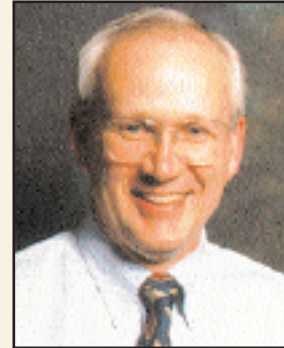
Dr. Raymond N. DuBois, Mina Cobb Wallace Professor of Gastroenterology and Cancer

Prevention and director of the division of Gastroenterology, will serve as principal investigator and his research group will conduct one of four separate research projects supported in the program. DuBois and his colleagues will continue their work in cell lines and animal models to learn more about how non-steroidal anti-inflammatory drugs (NSAIDs) help prevent the development of colon cancer.

Over the past several years, nearly three dozen studies have been published in the scientific literature documenting a 40-50 percent reduced risk of developing colon cancer among people who regularly take aspirin or other NSAIDs. DuBois and his colleagues have made the link to an enzyme called cyclooxygenase-2 (COX2), one of the primary targets for aspirin and NSAIDs.

Other researchers in the chemoprevention

program who are looking at other pieces of the NSAIDs-COX2-colon cancer puzzle include: Drs. R. Daniel Beauchamp, Jason D. Morrow, Robert J. Coffey Jr., John A. Oates, and Lawrence J. Marnett, Ph.D.



Dr. Raymond N. DuBois



Jonathan L. Haines, Ph.D.

VUMC designated Genetic Epidemiology Center

by Leigh MacMillan

Vanderbilt's Program in Human Genetics will play a central role in efforts by Glaxo Wellcome to identify the genes involved in common diseases. The pharmaceutical giant has designated Vanderbilt as one of the initial three Genetic Epidemiology Centers in the world.

The designation is part of a large-scale plan by Glaxo Wellcome to harness the power of genetics for drug development and discovery.

"Knowing the genes involved in a specific disease will mean that new pharmaceuticals can be targeted to the patients most likely to

benefit," said Jonathan L. Haines, Ph.D., associate professor of Molecular Physiology and Biophysics and director of the Program in Human Genetics at Vanderbilt. "Using the genes as probes to understand the biology of the disease will lead to the discovery of better drug targets and the development of more effective drugs."

Haines helped Glaxo Wellcome develop its plan for setting up Clinical Genetics Networks to search for the genetic basis of common diseases.

"I have known and collaborated with Jonathan Haines for two decades and asked him to be a consultant when we set up the Genetics Directorate," said Dr. Allen D. Roses, vice president and worldwide director for Genetics at Glaxo Wellcome. "Jonathan is a talented and experienced genetic epidemiologist and has insight into the analysis of susceptibil-

ity gene research."

The Glaxo Wellcome plan includes:

- Clinical Networks to identify candidate families and collect clinical information and blood samples;
- DNA Banking and Genotyping Centers to isolate DNA, store blood and DNA samples, and conduct high throughput genotyping; and
- Genetic Epidemiology Centers to design and coordinate an entire project and analyze the results.

Glaxo Wellcome has provided the funding for Vanderbilt's Program in Human Genetics to build the computing and analytical cores necessary for it to function as a Genetic Epidemiology Center.

In addition to Vanderbilt, Duke and Boston University Medical Centers will serve as Genetic Epidemiology Centers.

Paddling at the Pan Am



LENNY IGNEZI

June through August were busy paddling days for identical twins Justin and Dana Piasecki, Vanderbilt medical students who are on leave, training to make the kayaking team for the 2000 Olympics in Sydney, Australia. Their next big event is the Olympic Trials, held next spring.

Here's how they fared:

- In May and June the two competed together and individually in the Bratislava International Regatta in Bratislava, Slovakia and the World Cup in Poznan, Poland. Justin placed fourth overall in the singles competition in Bratislava and fourth in the World Cup.
- In the Pan Am selection trials in June, the twins placed third in the K2 (two-man boat) and Justin placed second in the singles competition. His team won the K4 (four-man boat) competition, then won the K4 competition in the Pan Am games in July, marking the first gold medal for the U.S. team at this year's Pan Am games.
- The twins won the silver medal in the national competition in Lake Placid, N.Y. in August. Justin won the gold medal in the singles event. He was named an alternate for the world championships in Milan in September. ♾



Performing a delicate repair for spina bifida on a fetus are (left to right) Drs. Noel Tulipan, Kyle Mangels and Joseph Bruner.

the frontier *of* surgery

By Nancy Humphrey

Fetal surgery to repair spina bifida is done early, when the fetus is too tiny to survive outside the womb.

Dr. Noel Tulipan examines an infant during a March evaluation of fetal surgery patients.



pina bifida. It's a diagnosis that used to mean an overwhelming helplessness and months of waiting for parents.

They could either wait until delivery to begin treatment for the disability, an opening in the spine that can cause paralysis or weakness of the legs, bowel and bladder incontinence, neurological impairments and learning disabilities. Or they could opt for abortion. Before the 1970s and better imaging techniques, the diagnosis was not made until birth.

But at Vanderbilt University Medical Center a pioneering new fetal surgery to repair spina bifida is offering hope for these families and causing chapters in pediatric medical textbooks to be rewritten.

"There will be a chapter on spina bifida. Then there will be a chapter on spina bifida after intrauterine repair," said Dr. Joseph P. Bruner, associate professor of Obstetrics and Gynecology and director of Fetal Diagnosis and Therapy and one of two leaders of a new fetal surgery program at VUMC.

Bruner and Dr. Noel B. Tulipan, associate professor of Neurological Surgery and director of Pediatric Neurosurgery, have performed about 60 of the procedures on fetuses with spina bifida, more than any other center in the world. Although other fetal surgery programs exist, there are none doing the particular technique that Bruner and Tulipan have performed. A less invasive endoscopic procedure, performed by the doctors in 1994, proved unsuccessful.

This technique, which costs about \$35,000, has also been used to repair one

case of congenital hydrocephalus (see sidebar on Neal Borkowski on page 12). Although the procedure was a technical success and the child is progressing well, it will be months before it is known whether the child has normal intelligence and development, Tulipan said.

Vanderbilt's fetal surgery program has received national and international attention. Stories have appeared on *Dateline NBC*, all major networks, *National Public Radio*, and in *The Wall Street Journal*, and *USA Today*.

In the technique to repair spina bifida, a small incision is made in the mother's abdomen; her uterus is partially removed from her body; and the amniotic fluid that surrounds and protects the fetus is removed. The fetus is then turned so the spine is exposed through the incision in the uterus and the opening in the spine is repaired. The amniotic fluid is then replaced, the uterus placed back in the mother and the abdomen closed.

So far, the youngest fetus has been 21 weeks old at the time of the repair – about the size of a tiny kitten and too young to survive outside the womb. The first procedures were done at 28 weeks.

In the hydrocephalus shunting procedure, a small tube is placed in the fluid space in the brain and the opposite end is hooked to a small valve that controls the flow of fluid that escapes through the top of the tubing. The valve is connected to another tube that is tunneled under the skin to exit through the baby's skin between the shoulder blades. The fluid drains into the amniotic fluid.

A second procedure is required after

the answer to our prayers

ANNE RAYNER



Joyce Garcia describes her son as a bright, typical almost 2-year-old – calling frequently for “Papa” and “Mama” and walking all over the place in their home in Jersey City, N.J.

But Nicholas Garcia is anything but typical. To his parents, he’s a miracle.

On Oct. 7, 1997, Nicholas underwent fetal surgery at Vanderbilt to repair his spina bifida. Born on Nov. 7, he has continued to amaze both his parents and the fetal surgery team with his progress.

“He is doing much more than we ever thought he would,” his mother said. “He’s seen an orthopaedic doctor here and needs no braces. He never stops. He knows several words, like Elmo from Sesame Street, and can even say ‘there it is’ in Spanish. He’s a good lit-

tle boy. I treasure all that.”

Deciding to have the surgery was an easy decision for the positive Garcias, who also have a 9-year-old daughter and 3-year-old son. “I really wanted to help my baby. I was worried about the cost of the procedure, but it wouldn’t be fair not to help my baby because of the money.”

Joyce and her husband, Alex, feel they were very adequately informed about the risks of the procedure.

“They made it very clear they didn’t have enough cases to prove the benefits, but we knew in our heart this was the answer to our prayers,” Joyce Garcia said.

the baby is born where the tube running through the skin and shoulder blades is exchanged for a tube that goes into the baby’s abdominal cavity where the fluid can drain permanently and be absorbed by the body.

The team will monitor the Borkowski infant’s progress before a decision is made on whether to continue the procedure for hydrocephalus. There is still much work to be done to determine, without a doubt, that the fetal surgery to repair spina bifida is a success. But the early data on the spina bifida repair are promising.

“I’m very enthusiastic about the program and I believe we should continue offering the surgery to the people who want it,” Tulipan said. “But I think we can probably improve the surgery, make the outcome better and perhaps reduce the risk.

“My main thrust is to do the surgery as early as possible. We have slowly but surely moved earlier in gestation.”

Bruner said he believes the surgery is

the best that can be done for children with spina bifida until basic research identifies the genes associated with the disease.

“In a sense what we’re doing addresses the failure to prevent this disease in the first place,” he said.

Many questions remain about the spina bifida procedure and its ability to lessen the effects of spina bifida. The team will be looking at:

Leg function – a careful study of the first 26 patients has not shown any difference between infants who have had fetal surgery and those who had the conventional, post-delivery surgery to repair the defect.

Bladder function – early data suggests there’s not much difference in the two groups but urologic testing can be unreliable at early ages.

Chiari Malformation – the surgery seems to have significantly reduced hind brain herniation into the spinal canal.

Shunts – The surgery appears to have reduced the need for shunts after birth.

Although Tulipan and Bruner are getting most of the publicity for the procedure, they are quick to praise the many other members of the team who make the surgery possible.

The team includes nurses, social workers and medical ethicists who meet for two days with families who are considering the surgery. The prospective patients also meet with Dr. William F. Walsh, professor of

“In a sense what we’re doing addresses the failure to prevent this disease in the first place.”

Pediatrics and chief of Nurseries, about the difficulties the babies may face in the first few days and weeks of life.

“The program is like needlepoint,” Bruner said. “You spend years talking to people, setting up connections, collaborations and working relationships and one day you look at it and say ‘we’ve got a program.’”

It may take 100 stitches or 1,000 stitches or 10,000 but at some point you look at it and say 'this is what it is.'

A unique part of the program is the inclusion of medical ethicists in making sure that parents have a clear understanding of the risks of the investigational procedure.

Mark J. Bliton, Ph.D., chief of the clin-

Training other physicians to do the procedure is fast becoming a priority for the Vanderbilt team.

ical ethics consultation service at the Center for Clinical and Research Ethics at Vanderbilt, and one of two ethicists on the team, said the pre-surgery counseling focuses on the fact that there is no guarantee of benefit.

"We emphasize the continual possibility for them to change their minds at any time and without prejudice...it seems clear that our consultation with patients and

their partners (at times including extended family members) has to be explicit, often-times even graphic, regarding the nature and extent of the risks they face."

Bliton said approximately 10 percent of parents who come to Vanderbilt for consultations decide against the procedure.

Tulipan and Bruner are in the process of applying for major funding for the program's continuation. It is an expensive plan.

"It costs \$2,000 a child to bring them back to Vanderbilt once a year for follow-up. If we follow the first 50, it will require a minimum of \$100,000 a year, just to follow up their medical progress. If we're looking at 20 years, we're looking at a substantial investment."

Spina bifida occurs in .12 to 2.5 per 1,000 live and still births. So training other physicians to do the procedure is fast becoming a priority for the Vanderbilt team.

"If we prove without a doubt the procedure is successful, we will want to train



ANNE RAVNER

Neal Borkowski warms up shortly after birth.

other physicians to do it," Tulipan said. "We certainly couldn't handle all the volume that's out there in this country or in the rest of the world."

Bruner agrees.

"We've been contacted by physicians from around the world who want to learn how to do this. We hope within the next five years there are many hospitals around the world that will be performing this procedure."

There is also discussion about what other malformations or diseases might be repaired *in utero*.

Bruner believes the next area will be repairing heart defects in the womb.

"The argument has always been these babies tend to do fine up until delivery: 'let's just leave them alone until they deliver then attack the problem after they're born.' But you can turn that around and say 'these babies are protected until after delivery. They're in a sterile environment so you don't have to worry about infection when you operate. Because their circulation is different there may be procedures that can be done in utero that will virtually not disturb the baby at all.'"

Bruner said for heart conditions that require several steps during childhood, fetal

Drs. Joseph Bruner (left) and Noel Tulipan are outnumbered by some of the 20 fetal surgery recipients who attended a recent reunion.



ANNE RAVNER

Internet link leads family to Vanderbilt

The Internet brought James and Susan Borkowski from Knoxville to Vanderbilt.

During a routine ultrasound at 20 weeks, the Borkowskis were told their unborn son, Neal, had hydrocephalus. At work the next day a disheartened James Borkowski shared the news with co-workers. A secretary mentioned she had seen a story on a network news magazine show about fetal surgery at Vanderbilt.

After scanning the Internet for news magazine shows, Borkowski came to *Dateline NBC* last and found the story he was looking for. It provided a link with a web page for Vanderbilt's fetal surgery program and by the end of the evening, Borkowski's phone call was returned by Dr. Joseph P. Bruner.

Although the fetal surgery team had not yet performed the procedure to repair hydrocephalus, they were ready and waiting for the right candidate.

Congenital hydrocephalus, seen in

about one in 1,000 deliveries, is a developmental defect of the brain in which an excessive accumulation of fluid dilates the cerebral ventricles. Babies born with hydrocephalus may be severely brain damaged.

Neal's March 2 surgery was deemed a technical success by Bruner and Dr. Noel B. Tulipan, who placed a shunt in the fluid space in the fetus' brain to remove the excess fluid that had been accumulating.

He was born on May 12, six weeks early.

It will be months before the surgical team knows whether the surgery was a complete success. Neal's coordination and vision must be monitored and his IQ measured.

But the 10-pound, five-month-old infant seems to be on track with his developmental milestones.

"He is smiling, but more at his Dad than me," his mother said. "He's reaching out to bat our faces and his mobile when we bring it down low. He has a lot of alert time where he watches everything that's going on."



ANNE RAYNER

Dr. Joseph Bruner greets fetal surgery patient Adrian Blades.

Continued from page 11

surgery has the potential to get the first one or two surgeries completed before the baby is even born.

Other possible uses for fetal surgery include: fetal therapies, treating metabolic

Other possible uses for fetal surgery include: fetal therapies, treating metabolic diseases and transplants of blood cells and tissues.

diseases and transplants of blood cells and tissues, the physicians said.

Research is an important aspect of this program, Tulipan said.

"This type of work needs to be backed up with good research in the laboratory."

The team will also look at the surgery itself.

"I think it will follow the same trends as adult surgery," Bruner said. "More and more surgeries are being done through minimally invasive techniques. I think fetal surgery will follow the same trend," Bruner said. ©



ANNE RAYNER

class of 2003



ANNE RAVNER

Medical students cool off at the Dean's picnic.

A NEW BEGINNING

There were 50 applicants for every position in Vanderbilt University School of Medicine's newest class, the Class of 2003. The class, as usual, ranked near the top in excellence – in the top five in the country for entrance exam scores (average MCAT score, 11.2).

The 104-member class consists of 44 women and 60 men. Twenty-nine states and 52 colleges and universities are represented. California has provided the largest chunk of students, 17.

"You will not be able to find a finer caliber of student anywhere in this country," said Dr. Harry R. Jacobson, vice-chancellor for Health Affairs. "A decade from now we'd like the degree you hold from Vanderbilt University School of Medicine to be from one of the top 10 medical schools." ♾



ANNE RAVNER

John Paul and Megan Olarte.



ANNE RAVNER

Dee Malkerneker (left) and Karen Martin at the Dean's picnic



The summer issue of Vanderbilt Medicine explored the potential therapies of stem cell research. Part 2 looks at the ethical debate involved.

Where are the **BOUNDARIES?**

BY DOUGLAS BROWN, Ph.D.

W

hat is the moral status of a fetus in the first few weeks of gestation? How about an embryo, an “extra” IVF-produced embryo, tissue from an aborted fetus or human stem cells that have been separated from an embryo?

These questions surround basic science researchers as they take the next steps toward revolutionary medical advances that could benefit millions of patients. But there’s much to gain:

- Deeper understanding of developmental biology at the beginning of human life
- Improvements in diagnosing disease
- A way to test new drugs without having to put patients at risk
- Transplantation therapies for Parkinson’s, diabetes, multiple sclerosis, and many other chronic conditions
- Elimination of waiting lists for donor tissue or organs

So why is the most immediate means for achieving such benefits — human stem cell research — so controversial?

In a March 1999 letter to President Clinton, 33 Nobel Laureates insisted that “. . . those who seek to prevent medical advances using stem cells must be held accountable to those who suffer from horrible disease and their families. Why such hope should be withheld?”

But opponents call this reasoning “the worst kind of utilitarianism” and believe society is “close to losing its conscience.”

Pluripotential human stem cells differentiate into all the body’s tissues and are not by themselves capable of creating a complete human being. Whether these cells can be isolated and grown in culture is no longer in question. Last November, a University of Wisconsin research team retrieved these cells from embryos produced by in vitro fertilization (IVF). And a Johns

Those who seek to prevent medical advances using stem cells must be held accountable to those who suffer from horrible disease and their families.

-33 Nobel Laureates-

Hopkins University research team retrieved these cells from aborted fetuses. A California-based biotechnology corporation funded both research teams.

Faced with these published reports, President Clinton asked the National Bioethics Advisory Commission (NBAC) to consider afresh the pros and cons of embryonic as well as fetal tissue research. Since 1995 a congressional ban on federal funding for human embryonic research has been a part of the Health and Human Services appropriations bill. In January, the NIH ruled that embryonic stem cells could be used for research. In September, the NBAC

group issued a strong endorsement of research on human embryonic stem cells, but recommended a national review panel to oversee the research.

This suggests that the pressure to pursue the potential health benefits of human stem cell research is strong. Few doubt that this research will proceed. But by whom? And under what regulations?

“All things considered, I think federal tax dollars should be used to fund stem cell research,” said Ellen Wright Clayton, M.D. J.D., Professor of Pediatrics and director of the Genetics and Health Policy Center at Vanderbilt. Clayton, a NIH consultant who has published widely on genetics issues, said it is crucial “that the donor consent process be free of coercion or ambiguity, that the data collection and interpretation be unbiased, and that the research material be handled with due respect. NIH oversight is far more likely to achieve these ethical goals than is private-sector oversight.”

Those who assign a fetus and an embryo equal moral standing with a fully developed human being, believe human stem cell research should not go forward if it is dependent on the abortion of fetuses or the destruction of embryos. The taint imposed by the means for retrieving the cells outweighs other considerations. One person should not be harmed or sacrificed for the betterment of another.

Those pushing such research forward are confident a consensus will form for retrieving stem cells from aborted fetuses. However, a consensus for destroying embryos to retrieve stem cells is much less certain. There is much opposition to creating embryos intentionally for research purposes.

Most realize that a protective fence needs to be placed around human stem cell research. But where? ●



by Clifton R. Cleaveland, M.D., MACP

A spirit that soars

*In December 1995 Jean-Dominique Bauby,
the 42-year-old editor of the French Magazine, Elle,
fell victim to a stroke that resulted in quadriplegia
and the locked-in syndrome.*



His physicians and loved ones presumed that like all such patients he would spend his remaining days devoid of any outward-directed communication. His secretary, however, discovered Bauby could communicate with a flicker of his left eyelid.

The two devised an alphabet. Over the next nine months Bauby reported life as he felt and dreamed it. He died in late 1996, two days after the publication of his singular memoir, *The Diving Bell and the Butterfly*.*

The diving bell of the title is Bauby's sense of entrapment within the confines of his ravaged body. This body required that it be tube-fed, turned, wiped, and lifted into wheelchairs. The butterfly represented the free flight of intellect and spirit that gave sustenance and meaning to the occupant of the diving bell. It was this spirit that could participate in giving and receiving love with his children and friends.

Jean-Dominique Bauby teaches us much in this memoir: about the pain of careless remarks by physicians in the presence of one thought insentiate, about the comfort of a gentle word and a held hand.

Bauby reflects upon a meeting with Claude, his secretary:

"Her purse is half open, and I see a hotel room key, a metro ticket, and a hundred franc note folded in four, like objects

brought back by a space probe sent to earth to study how earthlings, live, travel, and trade with one another. The sight leaves me pensive and confused. Does the cosmos contain keys for opening up my diving bell? A subway with no terminus? A currency strong enough to buy my freedom back? We must keep looking."

There is a rich literature that documents courage and gentleness in people seemingly without hope.

The twin metaphors can be extended to our clinical careers. Consider the physician's life as a diving bell, beautifully equipped with an ever-growing array of diagnostic and therapeutic wonders and ever more sophisticated information systems. It gives us power, a comfortable lifestyle, and substantial prestige. But it can entrap us.

Our butterfly is that part of our life that occurs necessarily outside the bathysphere.

Consider the broader concerns of medicine as our society wrestles with the tough issues of affordability, access to health care, and education in healthy lifestyles. Our time and insight are crucial to solving all these challenges.

Consider our lives with our families and friends, both of whom deserve time and

undivided affection.

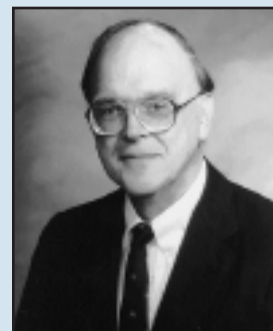
Consider our lives within the larger community as voters, as volunteers in charitable and cultural institutions, and as participants in our religious communities.

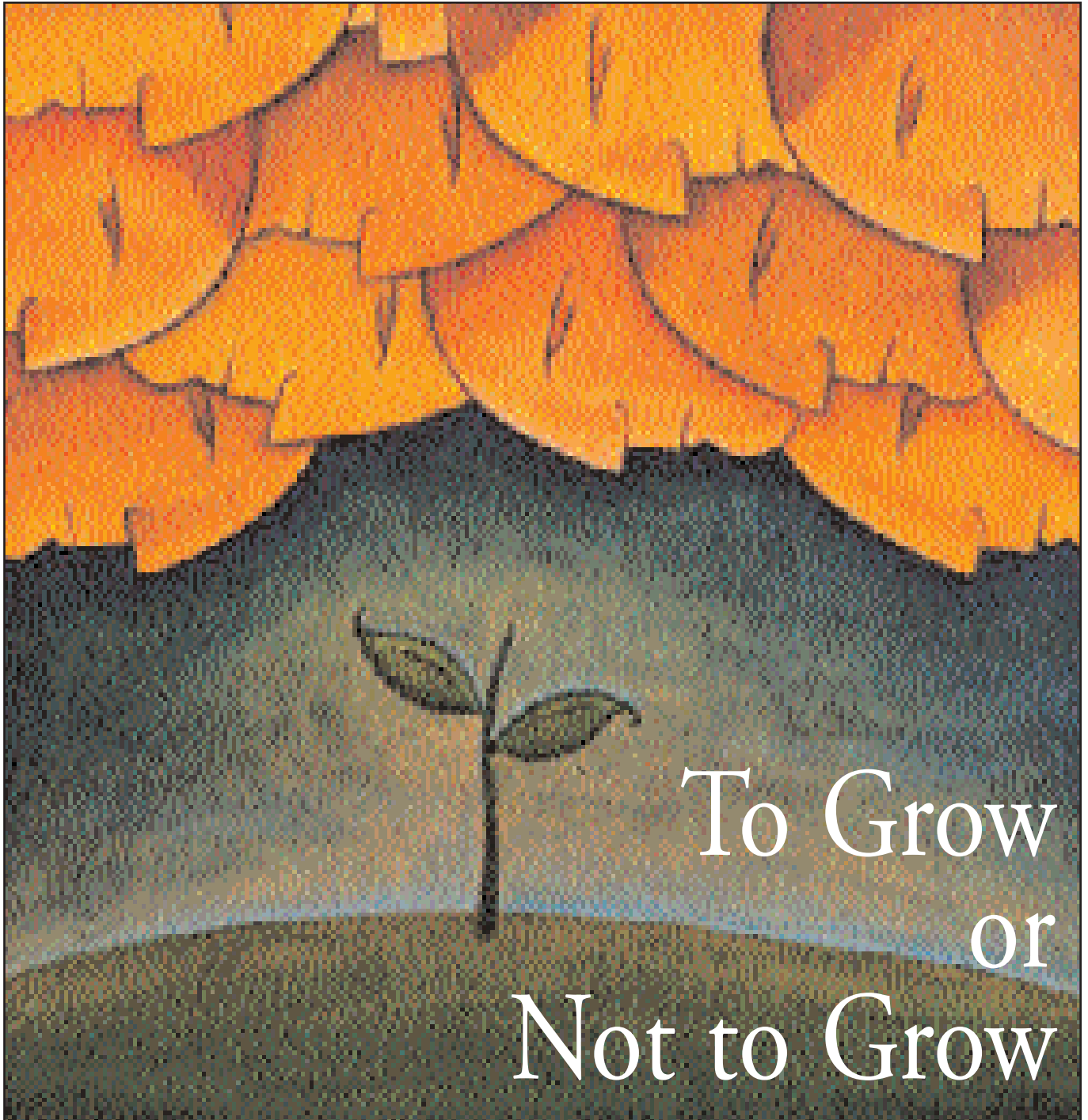
We owe ourselves time for reflection and to discover our own unique creative urges as thinkers, or writers, or performers, or special friends.

Our diving bells provide us with incredible experiences within the biological sciences. Only when this science is linked by a soaring spirit of love, imagination, and profound enquiry do we become complete. [Ⓟ]

* Bauby, Jean-Dominique. *The Diving Bell and the Butterfly*. Knopf. New York.

Dr. Clifton R. Cleaveland, HS '64-'67, F '70, is a published author and lover of literature. The Vanderbilt Medicine guest column will appear on occasion.





To Grow or Not to Grow

Scientists around the globe take a closer look at the process of blood vessel development.

by Leigh MacMillan

What if the natural process of blood vessel growth could be accelerated to promote wound healing or halted to prevent tumor metastasis?

Throwing water is a natural response to an uncontrolled fire. But it may not be the best course of action. If grease on the stove is ablaze, water will only spread the flames to new territory.

Like throwing water on a fire, the normal process of blood vessel development—angiogenesis—is also appropriate and desirable in some contexts, but not in others.

It's appropriate in the menstrual cycle, placental development, and wound healing, and as a possible therapy in places like the oxygen-starved heart. But in other situations, angiogenesis is like water thrown on a grease fire: it does more harm than good. Blood vessel development is a pathological feature of many diseases, particularly tumor growth and one that is creating excitement at Vanderbilt and other research institutions around the globe.

A laughable notion

Dr. Judah Folkman of Boston Children's Hospital and Harvard Medical School posited the idea that tumors depend on new blood vessels nearly 30 years ago. Folkman wrote in the *New England Journal of Medicine* that "without neovascularization, solid tumors might become completely dormant at a diameter of 2 to 3 mm." He suggested that "anti-angiogenesis therapy should provide a powerful adjunct to the control of solid neoplasms."

Folkman's assertions were greeted with skepticism.

"He was laughed at," said John S. Penn,

Ph.D., director of research and professor of Ophthalmology and Visual Sciences at Vanderbilt and an investigator in the angiogenesis field.

No one is laughing now.

"These ideas have come into vogue in recent years, and when the tide turned, it really turned," Penn said. A *New York Times* story describing Folkman's findings that the molecules endostatin and angiostatin shrank tumors in mice set off a furor last year among both patients and investors. EntreMed Inc., the company that had contracted to produce endostatin and angiostatin for clinical trials, saw its stock price shoot up 500 percent in just a few days.

Although tumor shrinkage is causing excitement, these drugs are poised to have a much broader impact. Other diseases that depend on blood vessel expansion include chronic inflammatory conditions such as arthritis, certain skin diseases, and the microvascular complications of diabetes, including retinopathy.

"In all of these contexts, efforts that might be successful in regulating angiogenesis have the potential to provide therapeutic avenues," said Dr. Thomas O. Daniel, Catherine McLaughlin Hakim Professor of Medicine and director of the Vanderbilt Center for Vascular Biology.

The Center for Vascular Biology was established this year to link investigators interested in mechanisms of blood vessel development and to "catalyze the application of their basic scientific discoveries into therapies for patients," Daniel said.



Dr. Thomas O. Daniel

Ready, set, grow

New blood vessels sprout from existing ones in a series of molecular steps. The endothelial cells that line mature vessels are “activated” by signals such as vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (bFGF).

Endothelial cells respond to these signals by producing proteins that chew through the existing vessel and clear a path for their migration. The cells proliferate and migrate, matching up with the appropriate partners to form new capillary tubes.

By characterizing the molecular players, scientists like Daniel and Penn are identifying new targets for angiogenesis-based therapeutics.

In a recent issue of *Cancer Research*, Daniel and his colleagues, including Lawrence J. Marnett, Ph.D., Mary Geddes Stahlman Professor of Cancer Research, and Dr. Jason D. Morrow, F. Tremaine Billings Professor of Medicine and Pharmacology, reported that thromboxane A₂, a product of the enzyme cyclooxygenase-2, participates in angiogenesis. The studies suggest that drugs directed against the thromboxane A₂ receptor, already available as anti-thrombotics, might be effective angiogenesis inhibitors.

“It’s an idea that we will explore with commercial partners,” Daniel said.

A lucrative model

Of the pharmaceutical companies racing to find angiogenesis inhibitors, several are working with Penn to test candidate drugs using his *in vivo* model for retinopa-

thy of prematurity (ROP). ROP, which causes blindness in premature infants, is one of several ocular diseases that share the pathology of retinal blood vessel growth into the vitreous humor of the eyeball. The group of diseases, which includes diabetic retinopathy and macular degeneration, accounts for 80 percent of all blindness in developed countries.

To recreate ROP in animals, newborn rats are exposed to a 14-day course of oxygen that is designed to mimic the experience of premature infants. They are returned to room air, and during the next six days develop a “severe” angiogenic response of blood vessels growing into the vitreous cavity.

“In developing the model, we went to a great deal of effort to quantify the patholo-

gy. We developed image analysis techniques that allow us to define the amount of neovascularization in a given animal. With these techniques, we can compare the effectiveness of various drugs in blocking the angiogenic response,” Penn said.

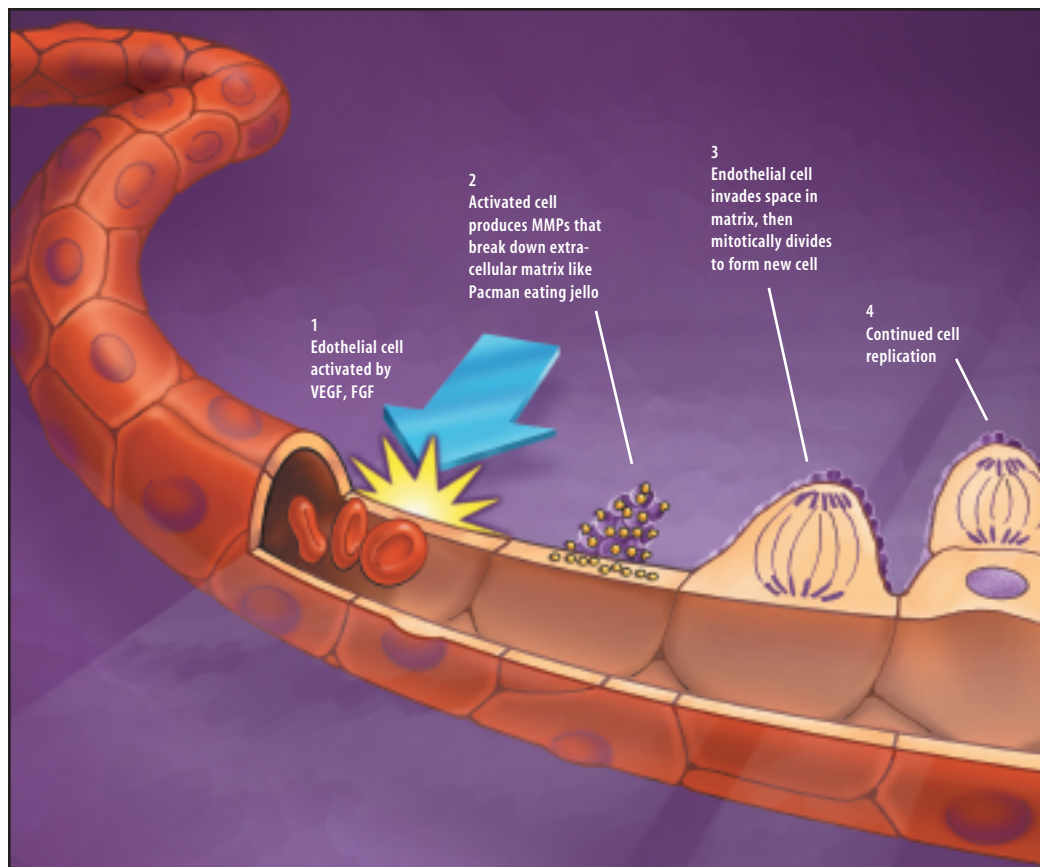
The ROP model is useful regardless of whether drugs are being developed for eye or other diseases, including cancer.

“It’s much easier to examine angiogenesis in the eye than it is to excise a tumor, section it serially, and look at blood vessel profiles,” Penn said.

In recent studies, Penn has focused on the proteins that endothelial cells produce to chew through the extracellular matrix, the matrix metalloproteinases (MMPs). In the ROP model, a Roche compound that

The process of angiogenesis

New blood vessels sprout from existing ones in a series of molecular steps. Endothelial cells respond to these signals by producing proteins that chew through the existing vessel and clear a path for their migration.



inhibits the activity of all MMPs is 95 percent effective at blocking angiogenesis.

“This blew us away; the level of efficacy was unprecedented,” Penn said. He has since defined specific members of the MMP family that participate in angiogenesis and has tested one compound that is a selective inhibitor.

He’s keeping mum on the results.

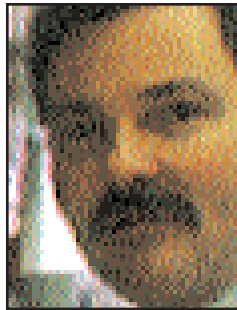
“I can only say that we’re not dropping that line of investigation,” Penn said.

Grow your own bypass

Angiogenesis isn’t always something to be blocked. Circulatory and cardiovascular disease patients stand to benefit from the development of new blood vessels. In fact, “grow your own bypass” therapeutics might help these patients avoid invasive surgical procedures.

Preliminary clinical results are positive.

A team of German physicians successfully stimulated capillary growth in patients



John S. Penn, Ph. D.

with coronary artery disease using the angiogenesis-promoter FGF. An American team introduced the gene for VEGF into heart muscle surrounding a blocked artery. Patients reported less chest pain, and tests showed evidence of new vessel growth and improved blood flow to the heart muscle.

These studies, still in their earliest stages, suggest a whole new paradigm for treating and managing heart and vascular disease. Under the direction of Dr. Raul J. Guzman, assistant professor of Surgery and Cell Biology, Vanderbilt will participate in the first large-scale study of FGF’s ability to promote blood vessel development in the legs and feet of patients with peripheral vascular disease.

The early days

With investigators in multiple disciplines pursuing basic and clinical research related to angiogenesis, Vanderbilt will continue to make significant contributions in this area.

“One of the early focuses of the new Center for Vascular Biology is to develop the means for following the efficacy of either drugs or experimental treatments on blood vessel formation,” Daniel said. “By integrating the discovery and testing process among investigators who consider a lot of different possibilities, we may find better venues for using certain treatments for therapeutic benefit.”

Daniel cautions that there is a long way to go before we fully realize the therapeutic promises of angiogenesis-targeted drugs.

“These are still early days.”

Starve A Tumor

by Cynthia Manley

Anti-angiogenic therapy represents a new strategy in the war on cancer. Instead of bombing tumors directly, the goal is to cut off the tumor’s supply lines. Ultimate objective: starve the tumors of nutrients and oxygen needed for their deadly march through the body.

Though still in the early stages of human testing, the approach is promising.

“We hope we’ll be able to hold the tumor in check, and that may be enough,” said Dr. Russell DeVore, associate professor of Medicine.

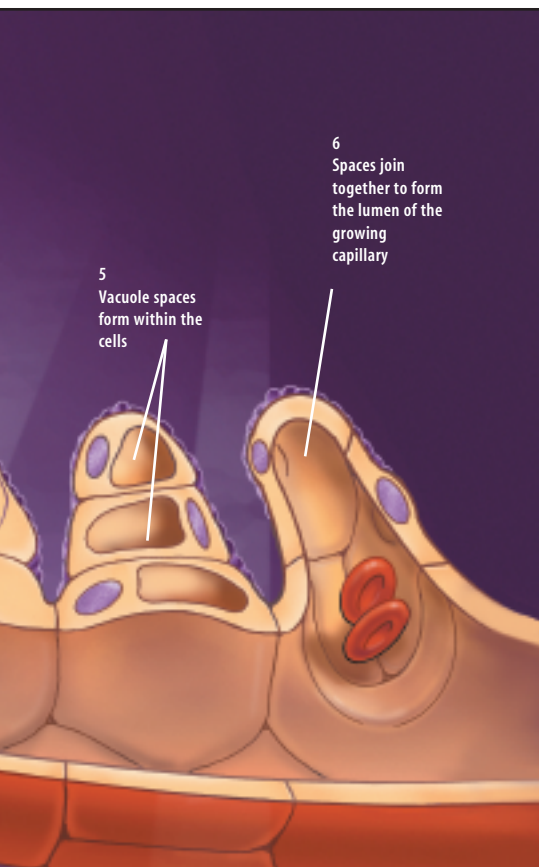
Targeting the tumor blood supply is an important focus of research – from bench to bedside – at the Vanderbilt-Ingram Cancer Center. In addition to basic research by Tom Daniel and his colleagues, physician-scientists are beginning to translate new knowledge about angiogenesis into clinical applications for patients.

“The excitement generated by these trials is that this is a treatment strategy not previously tested in humans. Most drugs are not ‘wonder drugs,’ but each new agent may add to our ability to treat and control cancer. I suspect these agents will be the same,” said Dr. Kenneth Hande, professor of Medicine and Pharmacology.

Anti-angiogenesis is hoped to offer at least three potential benefits over standard, less-specific chemotherapy:

- Fewer side effects;
- Less risk for drug resistance to develop (because the agents target genetically stable cells, rather than the ever-changing renegade tumor cells);
- Greater effectiveness (through combinations of therapies that target angiogenesis at different steps in the process).

More than 20 angiogenesis-inhibiting agents are being tested in cancer patients, with four of these agents being tested at the VICC, a National Cancer Institute-designated cancer center: an antibody against the vascular endothelial growth factor (VEGF); two matrix metalloproteinase (MMP) inhibitors, AG3340 and marimastat; and a drug called CM-101 that destroys newly forming blood vessels. VEGF is a key activator of angiogenesis, while the MMPs are necessary to “clear a path” through which the new blood vessels can grow.



VUMC ranks among the best

by Cynthia Manley

Vanderbilt University Medical Center is ranked among the leading centers in treating the top two killers in the United States — heart disease and cancer — in the latest “America’s Best Hospitals” list by *U.S. News and World Report*.

VUMC made the list of leading centers in cardiology and heart surgery for the first time, being ranked No. 30. The Vanderbilt-Ingram Cancer Center continued its steady climb, ranked No. 16 in cancer care, up from 21 last year and 35 the year before.

The 10th annual assessment of health care facilities is designed as a guide for consumers looking for the best medical care in 16 specialties. This year’s complete guide is published in the newsmagazine’s July 12 issue and can also be accessed on-line at www.usnews.com.

This year, VUMC was listed among the nation’s best in a total of 10 specialty areas. In addition to cardiology and heart surgery, first-

time entrants also included the digestive tract, 48th, and orthopaedics, 50th. Other specialties in which VUMC was again listed among the best were respiratory care, 12th; urology, 30th; ear, nose and throat, 15th; gynecology, 23rd; hormonal disorders, 13th; and rheumatology, 24th.

“We are extremely proud and pleased that VUMC has once again been ranked among the best in the nation and that the number of areas of specialty in which we are so recognized continues to grow,” said Dr. Harry R. Jacobson, vice chancellor for Health Affairs. “While this is only one indicator of quality, national recognition such as this is an important step in achieving our goal of becoming regarded as one of the premier academic medical institutions in the nation.”

The U.S. News rankings use a statistical method developed by the National Opinion

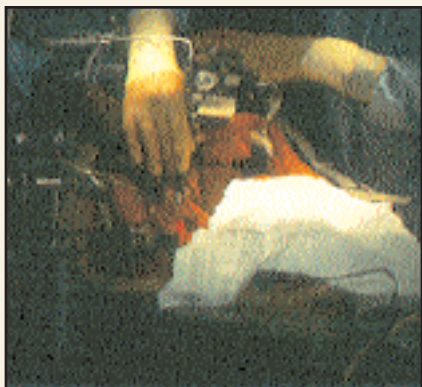
Research Center (NORC), a noted social science research group at the University of Chicago, to rank the quality of the nation’s hospitals each year.

To be eligible for ranking in any of the 16 specialties, a hospital had to meet at least one of three requirements — affiliation with a medical school, membership in the Council of Teaching Hospitals or a minimum of nine out of 17 key technologies readily available.

In an earlier *U.S. News and World Report* ranking, Vanderbilt University School of Medicine ranked 16th out of 125 accredited schools in the United States.



A map of the liver



by Matt Scanlan

VUMC scientists are pioneering a way to use MRI and CT images, long used for diagnostic procedures involving the brain, during therapeutic procedures in other parts of the body, much in the way that mammography can now be used to guide minimally invasive breast tumor biopsies and excisions.

The technique — detailed in a study published recently in the *Archives of Surgery* — could allow surgeons to see exactly where their instruments are located in the liver while they are operating, an ability that, until now, has

been elusive.

“What we would anticipate is using our image guidance to guide us to a spot right in the middle of the tumor, where we can remove the tumor, or kill it with ablative techniques,” said Dr. William C. Chapman, associate professor of Surgery.

The same technique has long been used to help remove tumors in the brain, where it is vital that surgeons know exactly where their instruments are located and what structures in the brain they are close to.

“What made this a little bit easier in intracranial surgery is that the markers that match the tomographic images with the real life brain can be attached to a fixed position on the skull,” said Robert L. Galloway, Jr. Ph.D., associate professor of Biomedical Engineering.

Until now, this method hasn’t been an option for liver surgeries because the abdominal cavity, unlike the skull, is not a rigid, fixed,

easily mapped shell.

What researchers have done to overcome that problem is to use the liver itself as a reference point between the patient and the imaging technology.

“We run an instrument over the surface of the liver which takes measurements as it moves. Those measurements are used to determine exactly where on the liver the probe has been placed,” Galloway said.

The imaging software then reconstructs the rest of the patient’s liver according to where the surface of the liver lies.

shirking Shingles

By Nancy Humphrey

Shingles. It sounds painful and it is.

But the pain varies as much as the duration – it can be a gnawing, aching, throbbing, constant pain. It can be sharp, severe and intermittent. It can result in an unusual sensitivity so pronounced that even a soft breeze blowing on the skin can be an ordeal.

The pain and abnormal skin sensation often precede a rash – usually red bumps that form tiny fluid-filled blisters. The rash typically occurs on one side of the body along the distribution of a single nerve, says Dr. Marie R. Griffin, professor of Preventive Medicine. She is a co-investigator in a multi-center trial that is looking at the possibility of shingles prevention through the varicella-zoster vaccine, a similar vaccine to the one that is used to prevent chickenpox.

Everyone who has had chickenpox is at risk for the reemergence of the varicella-zoster virus (VZV) or shingles. People who have shingles can't cause others to get it, but since they do have virus particles in their blisters, they can cause chickenpox in people who have never had it. It is most common in people over age 50, but can occur at any age. In the United States alone, more than 850,000 people have shingles each year and that 50 percent of people who live to the age of 85 will develop the disease. People who have a weakened immune system brought on by aging or an illness such as cancer or HIV are also more at risk.

“For many people it is so painful that it really interferes with their daily lives,” Griffin said.

The pain rarely lasts longer than a month in people under 40 but in older folks the pain can continue even after the rash is gone. More than half of patients older than 60 have pain lasting longer than a month and 10 percent have pain up to a year.

The investigators are looking for people 60 or older who have had chickenpox, but never shingles. There are 21 participating centers throughout the United States. The Vanderbilt investigators hope to enroll 1,800 volunteers over the next two years. About 37,000 are hoped to be enrolled nationally. For more information about the study, call 343-8800 in Nashville or toll free at 1-877-841-6251 nationally. ☺



More and more patients diagnosed with once-deadly childhood diseases are now reaching adulthood. It's a phenomenon that's creating both excitement and concern among physicians and patients.

Longlives

By Jessica Pasley

Typically childhood disorders such as congenital heart disease, cystic fibrosis, diabetes and cerebral palsy were characterized with high mortality rates. But in the last 20-30 years, medical and surgical advancements have given patients better chances of survival.

The continued rise in life expectancy in CF patients has created a need for adult pulmonologists to become experts in the care of patients with CF.

"Pediatricians have been treating adults for a long time," said Dr. Bonnie S. Slovis, assistant professor of Medicine and director of the Adult Cystic Fibrosis Center at Vanderbilt. "The numbers were small enough for adults to be incorporated into pediatric practices. Specific

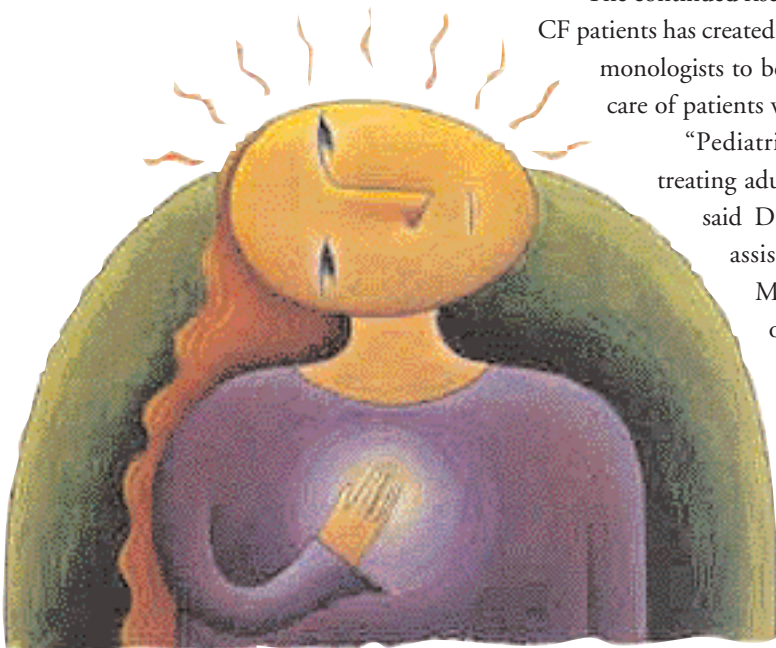
adult issues did not arise that often."

The longer patients live the more likely they are to develop general adult medical problems, like diabetes, cirrhosis, gallstones and kidney stones, as well as the manifestations of CF. Doctors are also grappling with new issues including high cholesterol, hypertension, colon cancer and the need for mammograms and discussions about reproductive issues.

"We just don't know all the problems these patients will face," admits Dr. Thomas P. Graham Jr., Ann and Monroe Carell Jr. Family Professor of Pediatric Cardiology and interim chair of Pediatrics.

Graham treats adults with congenital heart disease. He agrees that as patients with childhood diseases grow older the medical community will see a need to step up its effort in learning how to best treat this population.

"We have a lot of learning to do for the future," Graham said. "There are still many unresolved issues that need more attention. The long term evaluation of these patients



will play a key role in deciphering some of the questions.”

Today, better treatment options and earlier detection of congenital heart defects has increased the survival rates. Graham also credits a team approach to treatment plans as another key element.

“We will begin seeing an increase in the number of physicians and medical personnel trained in this area,” Graham said. “Each year another 25,000 children are born with congenital heart defects. We will see 85 percent of that patient population reach adulthood.”

Both disciplines have made incredible strides to enhance the care provided to its

patients. An Adult CF Clinic was created in 1997 and now follows more than 100 patients. Physicians here expect to be included on a list of facilities designated by the Cystic Fibrosis Foundation to train other adult pulmonologists in the management of adults with CF.

For congenital heart patients, Vanderbilt developed a team approach for treatment that incorporates the divisions of Pediatric Cardiology and Adult Cardiology, Cardiac and Thoracic Surgery and Obstetrics and Gynecology. The multidisciplinary approach combines the efforts of all departments to effectively manage patient care. ❷

Congenital heart disease



Dr. Thomas Graham and Mary McGlasson

When Carl Johnson talks about congenital heart disease he marvels at the advancements that have been made in 30 years.

“I had my first surgery when I was 4,” Johnson says. “Now, they do the exact same surgery at birth. It is amazing to see the ages of some of these children undergoing these procedures. It’s absolutely incredible,” he says.

Johnson, 31, is treated at Vanderbilt University by Dr. Thomas P. Graham, Jr., a pediatric cardiologist and Dr. Benjamin F. Byrd III, an adult cardiologist. Diagnosed at six months of age, Johnson is one of 600,000 adults with congenital heart disease in the U.S. The advances in early diagnosis and surgical and medical treatments have led to an increase in survival rates.

“In the past, treatment options have been very limited,” says Graham. “It has only been in the last 20-30 years that we have seen some change in the outcomes. Today, almost every patient with a congenital heart defect can receive surgery or effective medical management.”

Johnson, a field sales coordinator for Can-Do National Tape, is elated at his prognosis.

“I have continued to maintain a very positive attitude about my health.”

Mary McGlasson, another patient of Dr. Graham’s, was born with a hole in her heart that has required a shunt and surgeries at ages 1, 2, and 16. She’s now 31, working a full-time job, playing softball and coaching little league ball.

“I’m living a perfectly normal life,” she said. “When I was a baby, my parents were told I wouldn’t live past 2, then it was 12, then it was ‘she’ll never make it to adulthood.’ I proved them wrong.”

Cystic fibrosis

In the 32 years that Susan Reece has lived with cystic fibrosis, her life span has changed half a dozen times.

“Doctors told my parents I would probably live until I was two or three years old,” Reece recalls. “As I reached a particular age they would increase it two more years. When my parents asked about my prognosis – I remember target ages like 10, 13 and 21.

“Now the life expectancy is 31. That was unheard of even a few years ago. This really shows how much they are doing in terms of research. Establishing adult clinics means there are more patients surviving. That gives everyone hope.”

Reece said she continues to learn about her disease.

“As a child, my parents took care of me. Now in adulthood, I manage my disease.”

Although patients are facing new challenges as they reach adulthood, they are not alone. Doctors grapple with the unknown also.

“We are constantly learning,” admits Dr. Bonnie S. Slovis, assistant professor of Medicine and director of the Adult Cystic Fibrosis Center at Vanderbilt. “We are dealing with adult concerns now. It’s a real issue. We are now just uncovering the problems our patients may develop as adults.”

Reece has a mild form of the disease. Doctors have told her that if she maintains a



Dr. Bonnie Slovis and Raichon Bobel

healthy lifestyle, she could live to be at least 60 years old.

“I consider myself very lucky. I am not thinking about the end of life. I remember in my teen years I wondered if I would be around in the year 2000. I was aware of the life expectancy. Now, I just want to live as long as I can. And I know it’s possible.”

Raichon Bobel, 26, hasn’t had to deal with a cystic fibrosis diagnosis for her entire life. Diagnosed in 1994, at the age of 21, Bobel has a mild case. She recently moved from Bowling Green, Ky. to Hendersonville, Tenn., where she is closer to her doctors at Vanderbilt.

“I’m doing very well,” she said. “I’m working as a teaching assistant and doing everything I want to do. I don’t feel like there’s anything about my disease that’s life threatening.”

Dr. J. Donald M. Gass

20th century giant

By Nancy Humphrey



DEAN DIXON

A lengthy registration line back in 1946 led Dr. J. Donald M. Gass to where he is today – one of the world’s most respected ophthalmologists and experts on diseases of the retina, macula and uvea.

Gass, who grew up in Williamson County, came to Vanderbilt University in the fall of 1946 to register for his first year of undergraduate courses. He was leaning toward engineering school, even though his father was a physician who headed the Tuberculosis Control division of the Tennessee.

But when he entered the registration area, the line to register for engineering classes was much longer than the Arts and Science line. And the rest, so they say, is history.

“That’s literally how it all got started,” Gass says, laughing about his choice. “I figured I could change if things didn’t work out.”

Gass graduated from Vanderbilt University in 1950 and married his high school sweetheart, Margy-Ann Loser. He was obligated to spend three years in the Navy, which he spent in Korea and Japan. In 1957, he received a medical degree and the Founder’s Medal from the Vanderbilt University School of Medicine. Only five members of the class of 1957 chose ophthalmology, a specialty which had attracted little attention before at VUSM. Gass credits a faculty member, Dr. George Bounds, with instilling enthusiasm in the five graduates.

After medical school, he served an internship at the University of Iowa, then his residency at the Wilmer Institute at Johns Hopkins Hospital and a fellowship at the Armed Forces Institute of Pathology. Then he joined the faculty of the newly established Bascom Palmer Eye Institute at the University of Miami Medical School.

Gass and his family planned to come back to Vanderbilt after his residency, but instead they stayed in Miami for 32 years.

Then Vanderbilt wooed him back four years ago.

The couple planned to come back to Nashville to retire but when their daughter and her family moved to Nashville in 1995, Gass talked to Dr. Denis M. O’Day, chairman of the Department of Ophthalmology

they were either unrecognized or lumped together under less specific names.

“There has been much progress in the definition of the many degenerative, inflammatory and neoplastic diseases and in determining their natural course, visual prognosis, cause and treatment,” Gass said.

He is also well known for his work in finding the link between acute zonal occult outer retinopathy (AZOOR) and other retinal syndromes and in the treatment of diffuse unilateral subacute neuroretinitis. The disease, common in tropical areas, is caused by a worm that gains entrance into the blood stream, invading the area between the retina and choroid and causing severe visual loss in one eye.

Gass said the love of his career makes it

This year, at age 70, he was named one the 10 most influential ophthalmologists of the 20th century.

Since then, Gass has devoted his life to studying and treating patients with diseases of one of the body’s smallest organs. His career has resulted in many honors and awards of merit, including the establishment of the Gass Medal given for outstanding contributions in macular disease by the Macular Society. He was the first recipient in 1987.

This year, at age 70, he was named one the 10 most influential ophthalmologists of the 20th century. The designation came through a poll of nearly 33,000 ophthalmologists around the world, conducted by the American Society of Cataract and Refractive Surgery.

He was also the 1999 recipient of the Mildred Weisenfeld Award for Excellence in Ophthalmology from the Association for Research in Vision and Ophthalmology (ARVO).

and Visual Sciences at VUMC, and decided to spend the rest of his career at Vanderbilt.

Gass began his career practicing general ophthalmology. During this time he became actively involved in ocular surgery for cataract, glaucoma, orbital and retinal diseases and became interested in the new technique of fluorescein angiography that for the first time permitted the detailed photographic study of physiological as well as anatomical changes in the retina and choroid.

This new technique and his skills in ocular pathology led to his future clinical and research interests in degenerative, inflammatory and neoplastic diseases of the inner eye.

One of his main efforts has been simply sorting the many inflammatory disorders that appear similar in nature, but have very different causes and outcomes. Previously,

hard to even think about retiring. And having two of four children and five grandchildren living in Nashville has made it easier for him and his wife to blend an honor-filled career with quality family time.

“My career has been a great deal of fun. That’s why it’s so hard to say I’m going to hang it up and go fishing.”

A monthly fever in children

by Nancy Humphrey

Fevers are as common in young children as scraped knees and runny noses.

But some children have fevers that occur routinely each month like a woman's monthly period. A fourth-year Vanderbilt medical student has been studying the syndrome along with two Vanderbilt University faculty members. Their findings were published in the July issue of *Journal of Pediatrics*.

Kenneth Tyson Thomas is the lead author of the article that describes the syndrome, known as Periodic Fever, Aphthous stomatitis, Pharyngitis, and cervical Adenitis (PFAPA). It is a chronic condition usually seen in children under five, characterized by periodic episodes of high fever occurring roughly every four weeks.

The fever briskly rises to 103-105 degrees Fahrenheit and lasts three to six days. The syndrome is often accompanied by mouth sores, a bright red and inflamed throat, and swollen glands. The study looks at 94 children

identified with PFAPA and their long-term follow-up.

Thomas has studied the syndrome for more than two years with Dr. Kathryn M. Edwards, professor of Pediatrics who had first described PFAPA with Dr. Alexander R. Lawton, professor of Pediatrics and Dr. Gary Marshall Jr. from the University of Louisville. Dr. Marshall was also a Vanderbilt medical student at the time of the initial description.

To determine whether the patients who were seen over the past 13 years were still experiencing the episodes of fever, follow-up phone calls were made to most of the families during the summer and fall of 1997.

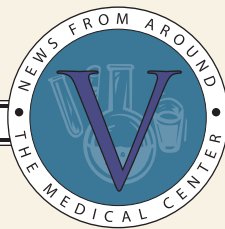
About one third of the parents contacted said the fevers had stopped. None of the group had developed any serious diseases. The study determined that the syndrome seems to have no detrimental long-term



health consequences.

Nothing can cure PFAPA but a small dose of prednisone alleviates the symptoms in some children. However, in some children it has been shown to increase the frequency of the episodes — from 28 days to 14-21 days.

"For some patients it becomes a trade off — shorter duration but a shorter time between episodes," Thomas said.



Study explains how psycho-drugs work

by Leigh MacMillan

Our neurons make a mess when they talk to each other, but luckily they come equipped with their own maid service. Nerve endings are studded with proteins called transporters that act as molecular vacuum cleaners, clearing the synapse of released chemical messengers.

Transporters are critical to normal communication in the brain, and they are targets for both therapeutic drugs and drugs of abuse. The transporter for the neurotransmitter serotonin, for example, is blocked by antidepressants like Prozac and is a site of action for cocaine and amphetamines.

VUMC scientists studying the serotonin transporter discovered new regulatory mechanisms that move the transporter on and off the cell surface. Their findings were reported in the July 30 issue of the journal *Science*.

Earlier studies showed the transporter could be chemically modified and removed

from the surface in response to activated signaling pathways inside the neuron.

"The problem is, other signals could pull the transporter off the cell surface right when it needs to be there to clear away serotonin," said Randy D. Blakely, Ph.D., Allan D. Bass Professor of Pharmacology and director of the Center for Molecular Neuroscience.

He and Sammanda Ramamoorthy, Ph.D., research assistant professor of Pharmacology, wondered if there was a way for the transporter to "ignore" these inside signals when serotonin is around and needs to be cleared.

"Anything that goes through the transporter, such as serotonin and amphetamines, blocks the modification and prevents the transporter from moving off the surface," Blakely said.

"We call it our use-it-or-lose-it model for transport. If the transporter is not active, it becomes susceptible to other pathways that

pull it off the cell surface."

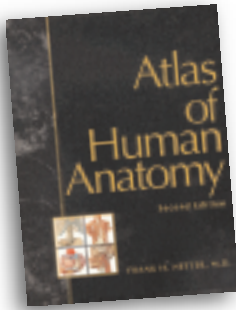
Drugs that block transporter activity — antidepressants and cocaine — prevent serotonin from sustaining the transporter at the cell surface. This is a very different action than simply blocking transporter activity to influence the level of neurotransmitter in the synapse.

"We don't understand why antidepressants take a period of time to have activity, or why use-dependent changes occur with respect to addiction," Blakely said. "What we're hinting at is that a long term consequence of these drugs occupying the transporter will influence the number of transporters at the cell surface."



BOOK CORNER

Fall Book Reviews



Atlas of Human Anatomy Second Edition

By Dr. Frank H. Netter

Arthur F. Dalley II, Ph.D.,
consulting editor, professor of Cell
Biology, VUMC, 1997, Novartis,
525 pages.

Over more than 50 years, Dr. Frank Netter produced nearly 4,000 illustrations. The illustrations included varied subdivisions of medical knowledge such as gross anatomy, histology, embryology, physiology, pathology, diagnostic modalities, surgical and therapeutic techniques and clinical manifestations of many diseases.

But in 1989, Netter published the first edition of an atlas purely of human anatomy.

The second edition includes additional Netter illustrations and new artwork in the Netter style by Novartis artist Dr. Carlos Machado. Labeling has also been improved by making the terminology consistent throughout the book and updating it to the most current standard for anatomical terminology.

Clinically Oriented Anatomy Fourth Edition

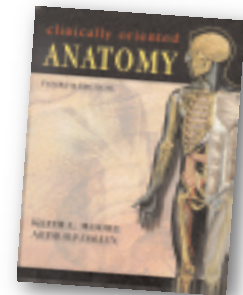
By Keith L. Moore, professor emeritus of Anatomy and Cell Biology, University of Toronto, and Arthur F. Dalley II, Ph.D., professor of Cell Biology, VUMC, Lippincott Williams & Wilkins, 1999,
1164 pages

It's been seven years since the third edition of "Clinically Oriented Anatomy" was published. The new edition is even more student friendly because of the significant new changes in the text-art program.

The book has been widely acclaimed for the relevance of its clinical correlations. The fourth edition places clinical emphasis on anatomy that is important in general practice, diagnostic radiology, emergency medicine and general surgery.

Special attention has also been directed toward assisting students in learning the anatomy they will need to know in the 21st century. The clinical information is now supported by photographs and/or color illustrations to help with understanding the practical value of anatomy.

Most chapters end with a section on medical imaging and case studies. The medical imaging displays pull together various combinations of radiographs, MRIs, CTs, correlative line art and explanatory text.



Calendar of Events



CME

Listed below are confirmed special conferences, workshops and seminars of three or more credit hours. For a detailed program brochure, call 615-322-4030, or write D-8211 Medical Center North, Nashville, Tenn., 37232-2337.

November 1999

November 6

Osteoporosis: New Technologies and Treatments

Course Director: Dr. Esther Eisenberg
Location: Vanderbilt University Medical Center, Rudolph Light Hall
Contact: Nanette Bahlinger (615) 322-4030

December 1999

December 3-4

25th Annual High Risk Obstetrics Seminar

Department of Obstetrics and Gynecology
Course director: Dr. Frank H. Boehm
Location: Vanderbilt University/Langford Auditorium
Contact: Nanette Bahlinger (615) 322-4030

January 2000

January 29-February 5

22nd Annual Sisson International Head and Neck Workshop

Course Director: Dr. Robert H. Ossoff
Location: Vanderbilt University Medical Center, Rudolph Light Hall
Contact: Nanette Bahlinger (615) 322-4030

Receptions and Dinners

October 25, 1999

American Academy of Ophthalmology
Reception, Renaissance Orlando Resort
Orlando, FL.

November 7, 1999

American Heart Association
Reception, Fox Theater
Atlanta, GA.

December 1, 1999

Emeritus Professors Dinner
Loews Vanderbilt Plaza
Nashville, TN.

Understanding *H. pylori*



by Leigh MacMillan

Human bodies are teeming with bacteria, and yet the relationship we share with our normal flora — the organisms that live in and on us — is poorly understood.



Dr. Martin J. Blaser

VUMC scientists and the University of Michigan are shedding some light on the subject by using mathematics to examine how the bacterium *Helicobacter pylori* colonizes the stomach, even in the presence of an immune response. They reported a mathematical model that describes the dynamics of *H. pylori* infection in the July 20th issue of the Proceedings of

the National Academy of Sciences.

"An outstanding feature of *H. pylori* colonization is that there is an immune response, which means the host recognizes that the organism is there, and yet *H. pylori* persists, essentially for life, in everybody carrying it," said Dr. Martin J. Blaser, Addison B. Scoville Jr. Professor of Medicine, director of the division of Infectious Diseases, and professor of Microbiology and Immunology.

"So the question is, how do the host and the bacteria co-exist?"

In an earlier paper, Blaser and his collaborator, Denise Kirschner, Ph.D., developed a model to examine the relationship between *H. pylori* and the human host at equilibrium — some years after the organism has been acquired, when the system is balanced. The model demonstrated that bacteria and host were related in a feedback loop. The bacteria produce factors that cause the host to have inflammation, which in turn provides nutrients for the bacteria.

"In essence, the two are dancing together; each one is signaling the other...our normal flora are actually working in concert with us,"

Blaser said.

Blaser and Kirschner's earlier studies did not account for the early stages of infection or the host's immune response. The current model includes time — moving from one bacterium to an entire community, and terms for immunity — changing from a naive host to an immunologically aware host.

"Everything about the model works, and it is consistent with indirect experimental data. We're able to describe the initial transition from one organism to a bloom of organisms, and then as immunity kicks in, the organisms settle down and reach equilibrium," Blaser said.

Work is now in progress to test the mathematical model in a mouse experimental model.

In the Next Issue

Dr. John E. Chapman has announced he is stepping down as Dean of the Vanderbilt University School of Medicine, a post he has held for the last quarter-century. He is leaving to take on a new role — vice chancellor for Medical Alumni Affairs.

Chapman, a giant in American medical education, has conferred medical degrees on two-thirds of the living graduates of VUSM. He will continue as Dean until his successor is named and in place.

Look for more about Dean Chapman's tenure in the next issue of *Vanderbilt Medicine*.



Reunion 2000

It's not too early to start thinking ahead! Alumni reunion is scheduled for Oct. 19-21, 2000. Classes ending with 4,5,9 and 0 will meet to celebrate the 125th anniversary of the beginning of Vanderbilt University School of Medicine.

Make plans to join us!

We're always interested in hearing from our readers. Send your comments to the editor at Nancy.humphrey@mcm.vanderbilt.edu

CAMPAIGN UPDATE

a record giving year

A Building for the Children

Building plans are underway for a new freestanding Vanderbilt Children's Hospital, which will be built on the corner of Pierce and 22nd Avenue. The ongoing campaign, led by Monroe and Ann Carell, hit a highpoint when the lot was marked as the future sight of Children's Hospital and Pierce Avenue honorarily named "Children's Way." Already friends and alumni have committed funding needed for a number of areas in the new hospital including a state-of-the-art schoolroom, performance area, and a business center for parents of children with extended hospital stays.

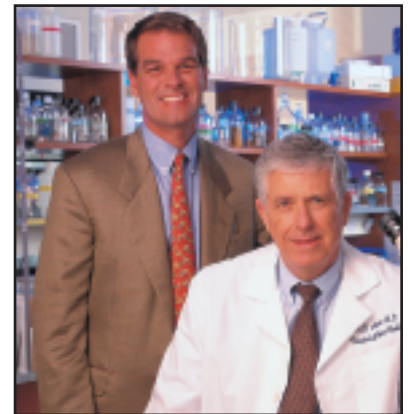


Monroe Carell, CEO of Central Parking Systems and chairman for the Building for the Children Campaign, chats with a young patient at Vanderbilt Children's Hospital.

Gifts from alumni and friends totaled \$99,132,475 this fiscal year, making this a record-breaking period. Your gifts fund innovative research, student scholarships, and the finest patient care possible. This record-breaking year is due, in part, to two ongoing capital campaigns, one for a new Children's Hospital, the other to fund a bold strategic plan for the Vanderbilt-Ingram Cancer Center.

Imagine a World Without Cancer

Through the leadership of Orrin Ingram, the Campaign to Imagine a World Without Cancer is well underway. The campaign aims to raise the funds needed to assemble the foremost minds in cancer, equipped with the most advanced technologies available, to target what has been identified as six of the most promising areas of cancer research and to train the next generation of cancer physicians and scientists. Already, donors have made possible the recruitment of four new research scientists and clinicians, ten endowed professorships, the enhancement of the Center's outreach and communications programs, and two state-of-the-art shared research facilities, including the Vascular-Imaging Technology and Microarray Facility, resources that are available to all researchers at the Cancer Center.



Orrin Ingram, President and CEO of Ingram Industries, and Hal Moses, M.D., Director of the Vanderbilt-Ingram Cancer Center, are navigating a bold strategic plan in cancer research.

Thank you for your continued support of our patients, students, and research efforts.

In this publication, we have not specifically acknowledged gifts designated to the Building for the Children Campaign or the Imagine a World Without Cancer Campaign due to their ongoing status. We would like to thank those alumni and friends who have generously supported these campaigns and will properly acknowledge these gifts at a later date.

Alumni Journal

KEEPING IN TOUCH



Welcome to the First Year Class of 1999

The first year class enjoyed a welcoming picnic supper and swim in the pool of Dean and Mrs. John E. Chapman at their home in mid-August.

This new class of 104 students are anxious to pursue their goals of learning about the healing arts. This group includes 60 men and 44 women with 26 from the Southeast, 17 from California, 10 from Tennessee and the remaining from 27 other states. Although all were educated in this country, 9 are citizens from Canada, China, Italy, South Korea or Romania. Its members have recorded average MCAT's of 11.2 with GPA's of 3.74. This record places Vanderbilt in the top five Medical Schools in the country for entrance exam scores. Nine students are seeking combined M.D./Ph.D. degrees, one enters with a Ph.D. degree and another has a JD degree. Many have studied or taught in 20 different countries.

There are several athletes among the group who have earned eight different varsity letters and one was a member of the United States National Swim Team. The countless hours of service that many provided to the disadvantaged and homeless, retarded citizens and battered women is most impressive. We are grateful to John N. Lukens, Jr., M.D., and his devoted Admissions Committee for adding such an outstanding group to the Vanderbilt community.

New Residents Arrive

On July 1, 202 new resident physicians arrived to continue their medical training. The total number of house staff now totals about 680. New residents had a comprehensive 5-day orientation program arranged by Dr. Fred K. Kirchner, Associate Dean for Graduate Medical Education. Transition from student to resident staff is a difficult one so Dr. Kelly Blair and Dr. Seenu Reddy, co-

chairs of the House Staff Advisory Council, advise and support residents throughout the year. Representatives from each specialty serve on this council which maintains an open line of communication with the administration. The two chairmen also serve on the Medical Alumni Board of Directors. All residents are members of the

Medical Alumni Association.

Alumni Support

We are grateful for the wonderful cooperation and support that we have enjoyed from our alumni/alumnae through the years and are fortunate to have the backing and guidance of the Vice-Chancellor for Health Affairs and the Medical School Dean.

We urge all alums to continue sending us information about their professional activities, family additions and other events that will be of interest to classmates.

Reunion 2000

Alumni Reunion is scheduled for Oct. 19-21, 2000. Planning begins at least a year in advance so we are now gearing up to arrange a festive celebration for this 125th anniversary of Vanderbilt University School of Medicine's beginning. This will also be Homecoming weekend with a football game between the Commodores and the University of South Carolina Gamecocks.

Please mark the dates on your calendar and plan to come. ☺

Best regards,
George W. Holcomb, Jr.
George W. Holcomb, Jr., M.D.
Executive Director
Medical Alumni Affairs

VITAL SIGNS

Faculty News • Alumni News • Continuing Education

Faculty News

Virginia D. Abernethy, Ph.D., professor of Psychiatry, received an Emerita title at the May 14 Commencement ceremony.

Dr. Carlos L. Arteaga, David P. Carbone, M.D., Ph.D., Graham Carpenter, Ph.D., Dr. Robert J. Coffey Jr., Lynn M. Matrisian, Ph.D., Dr. J. Robert Roberts, Dr. Mace L. Rothenberg and Earl Ruley, Ph.D., have been awarded Ingram Cancer Research Professorships, made possible by an ongoing fundraising campaign for the E. Bronson Ingram Cancer Center at Vanderbilt. In addition two newly recruited new faculty members, Dr. Freidrich Schuening and Andrew Link, Ph.D. have also been appointed Ingram Professors of Cancer Research.

Dr. Harvey W. Bender, Jr., professor of Cardiac and Thoracic Surgery, received an Emeritus title at the May 14 Commencement ceremony.

Dr. Jordan D. Berlin has joined the Vanderbilt-Ingram Cancer Center as assistant professor of Medicine in the division of Medical Oncology to direct its gastrointestinal oncology program. He was previously assistant professor at the University of Wisconsin Hospital in Madison.

Dr. M. Lawrence Berman, professor of Anesthesiology, received an Emeritus title at the May 14 Commencement ceremony.

Dr. Benjamin F. Byrd Jr., clinical professor of Surgery, received an Emeritus title at the May 14 Commencement ceremony.

Charles W. Coffey II, Ph.D., associate professor of Radiation Oncology and Physics, has been chosen president-elect of the American Association of Physicists in Medicine.

Dr. Thao P. Dang, a fellow in Hematology-Oncology, was among 17 fellows selected by the American Society of Clinical Oncology to receive a Young Investigator Award at the orga-

nization's annual meeting in May in Atlanta. The awards are given each year to encourage young clinician's participation in research.

Drs. Thao P. Dang, Jonathan Dowell, and Stacy Moulder, fellows in Hematology-Oncology, have been named the first recipients of Harry Joyce Fellowships in Medical Oncology. The fellowships are funded by the Joyce Family Foundation.

Dr. Raymond N. DuBois, Mina Cobb Wallace Professor of Gastroenterology, has been appointed to the National Institutes of Health team that provides peer review of grant requests in the field of general medicine. He will serve through June 30, 2003. He has also been elected to the Scientific Advisory Board of the Keystone Symposia on Molecular and Cellular Biology.

Dr. Virginia Eddy, associate professor of Surgery, was awarded one of the university's two Chairs of Teaching Excellence at the April Board of Trust meeting. The awards recognize outstanding classroom teaching.

Dr. Kathryn M. Edwards, professor of Pediatrics, was honored by the University of Iowa College of Medicine with the school's 1999 Award for Achievement. The award recognizes alumni of the medical college for significant accomplishments in science and medicine.

Dr. John J. Franks, professor of Anesthesiology, received an Emeritus title at the May 14 Commencement ceremony.

Dr. H. David Hall, professor of Maxillofacial Surgery, received an Emeritus title at the May 14 Commencement ceremony.

Dr. A. Everette James Jr., former professor and chairman of the Department of Radiology and Radiological Sciences (1975-1991), lives in Chapel Hill, N.C. with his wife, Nancy. He keeps busy building his art collection (now more than 400 paintings, including

an extensive collection of southern artists). He has also restored two buildings in North Carolina, one of which, the St. James Place Museum – the Primitive Baptist Church, is now used as a folk art museum for North Carolina quilts, antique decoys and art pottery.

Dr. Richard A. Margolin, associate professor of Psychiatry, and Mark L. Wolraich, professor of Pediatrics, participated in a daylong conference in Washington, D.C. in June, the first White House Conference on Mental Health. Vice President Al Gore Jr. and his wife, Tipper, spearheaded the conference.

Dr. Bonnie M. Miller, a general surgeon who has served on the VUMC clinical faculty since 1987, has been named Associate Dean for Medical Students at VUSM. She fills the post previously held by Dr. Deborah C. German, who is now Senior Associate Dean for Medical Education.

Dr. Jason D. Morrow, associate professor of Medicine and Pharmacology, has received a prestigious Burroughs Wellcome Fund Clinical Scientist Award in Translational Research. BWF chose nine award recipients from a field of over 100 applicants.

Dr. Rose M. Robertson, professor of Medicine, has been named president-elect of the American Heart Association. She is the first Vanderbilt physician ever to be elected to the post. She has been a volunteer with the AHA for more than 20 years.

Dr. Roscoe R. Robinson, former vice-chancellor for Health Affairs, received an Emeritus title at the May 14 Commencement ceremony.

Dr. Bruce J. Roth has joined the Vanderbilt-Ingram Cancer Center as Hamilton Professor of Medicine and Urologic Oncology and co-director of the center's program to treat genital and urinary cancers. Roth, who also serves as section chief of solid tumor-oncology, comes to Vanderbilt from the University of Indiana.

Elaine Sanders-Bush, Ph.D., professor of Pharmacology and Psychiatry, will serve as interim chair of the Department of Pharmacology until a new chair is identified.

Dr. William S. Stoney, professor of Cardiac and Thoracic Surgery, received an Emeritus title at the May 14 Commencement ceremony.

Dr. John B. Thomison, clinical professor of Pathology, received an Emeritus title at the May 14 Commencement ceremony.

Dr. John S. Warner, professor of Neurology, received an Emeritus title at the May 14 Commencement ceremony.

Alumni News

'43

Dr. R. Bertram Williams Jr., MD'43, was one of five recipients of a Distinguished Service Award from the University of North Carolina at Chapel Hill School of Medicine. He was presented the award in April at the medical school's spring banquet. He is retired chief of the medical staff at New Hanover Regional Medical Center in Wilmington. He attended UNC-CH School of Medicine when it was a two-year program, prior to attending VUSM.

'47

Dr. William G. Crook, HS'47, was featured in the July/August 1999 issue of *Mothering Magazine* as a "Living Treasure." He has written 13 books. Several of which, including *The Yeast Connection Handbook*, have become bestsellers. Crook is also president of the International Health Foundation.

'58

Dr. Coyle W. Williams, Jr., HS'58, is retired and volunteering for Gideons International in San Antonio. He lives part-time in Galveston, Texas.

'64

Dr. Ralph C. Gordon, MD'64, is a pediatric infectious disease professor with Michigan State University. He was elected to membership in the American Osler Society and is also an adjunct professor of American History at Western Michigan University.

'71

Dr. Scott L. Faulkner, HS'71-'74, '75-'76, has been elected chairman of the board of the Alabama Quality Assurance Foundation. Faulkner, a thoracic surgeon, practices in Montgomery, Ala. AQAF is a nonprofit, physician-sponsored organization designated by the Health Care Financing Administration as Alabama's Medicare peer review organization.

'74

Dr. Carol A. Tamminga (Hengeveld), MD'71, was elected to the prestigious Institute of Medicine of the National Academy of Sciences in recognition of her "major contributions to health and medicine or to related fields..." Dr. Tamminga is a professor of psychiatry at the University of Maryland School of Medicine and is nationally recognized as a leader in developing clinical treatments for schizophrenic patients.

'74

Dr. William F. Thistlethwaite, MD'74, is joining the Fisher-Titus Medical Center staff as part of the New Beginnings Pediatrics practice.

'75

Dr. Fred Callahan, MD'75, HS'75-'76, is producing a weekly, 30-minute radio program each week called Health Power Radio. The program explores medical topics and educates through real-life stories told by patients and their physicians. Callahan is a neurologist at Centennial Medical Center in Nashville.

'76

Dr. David E. Dugger, MD'76, has joined St. John's Regional Medical Center in Joplin, Mo.

'77

Dr. Iverson Bell Jr., MD'77, has been named medical director of psychiatry services at Atlanta Medical Center. He is also a faculty member and psychiatric consultant to several medical organizations including Morehouse School of Medicine and the Army Reserve at Fort McPherson.

'79

Dr. Suzanne Dowdy Butler, MD'79, HS'79-'82, and her husband, Daniel, celebrated the birth of their third son, Pete, on Feb. 5, 1998. Pete joins Jake, 11, and Max, 18, a freshman at Vanderbilt.

Dr. Bruce M. Kauder, HS'79-'82, has been elected president of the Newport News Medical Society for 1999. He is also chief of staff at Riverside Regional Medical Center in Newport News, Va.

'84

Dr. Robert H. Packer, HS'84, married Kathleen Schween of Littleton, Colo. in 1997.

'85

Dr. Sharon Wyatt Moore, MD'85, has been appointed director of medical and regulatory affairs for Clinical Trial Management Services. She is a clinical assistant professor of geriatrics and family medicine at Eastern Tennessee State University's James H. Quillen College of Medicine and has been affiliated with the Veterans Affairs Center in Johnson City for eight years.

'86

Dr. Dennis E. Schellhase, HS'83-'86, was recently promoted to associate professor of Pediatrics and is medical director of the Arkansas Children's Asthma Center at Arkansas Children's Hospital in Little Rock. He and his wife, Debi, have been married 18 years and have four children.

'89

Dr. Roger Blauvelt, MD'89, is in private practice, specializing in orthopaedics and hand surgery, in Renton, Wa., located south of Seattle

'90

Dr. Jonathan Dreifus, MD'90, has begun private general surgery practice in Portland at the Maine Medical Center.

Dr. Lauren G. Ficks, MD'90, married Ami C'hen in Los Angeles on Aug. 9, 1998. She is board certified in Internal Medicine and Endocrinology and is practicing in Los Angeles.

'91

Dr. Julie Cox Kennon, MD'91, husband, Jerry, and two-year-old daughter, Isabel, welcomed the couple's first son, William Hampton on Oct. 9, 1998. She has joined Associated Radiologists, P.C., and practices at St. Thomas Hospital in Nashville.

'92

Dr. Scott R. Gibbs, MD'92, is completing a fellowship in laryngology/neurology at St. Lukes/Roosevelt Hospital Center in New York, NY. He will be starting private practice in Huntington, W. Va., joining River Cities ENT Specialists, Inc.

Dr. Lynn Noel Lameier, MD'92, married John Earl Ellington on Sept. 19, 1998. She is in private practice in obstetrics/gynecology at the Murfreesboro Medical Clinic in Murfreesboro, Tenn.

'93

Dr. George G. Robinson II, MD'93, completed his orthopaedic residency at the University of Kansas in June and joined a local orthopaedic group, Orthopaedic Professional Association.

'96

Dr. Patrick R. Showalter, MD'96, and his wife, Margaret, are celebrating the birth of their first child on June 18, 1998 – Margaret Alicia "Maggie."

'97

Dr. Phillip C. Stites, MD'97, married Stacy Lee Long on June 5, 1999 in Hartsville, Tenn.

'98

Dr. Laura L. White, MD'98, is serving a General Surgery residency at Vanderbilt. She married Dr. William E. Lawson, a Vanderbilt resident in Internal Medicine, on June 19, 1999.

In Memoriam

Dr. Sandra Reese Leavell Barker, HS'77-'79, '83-'84, F'83, FA'80'82, CF'83-'88, died July 23, 1999 in Nashville. She was a specialist in both adult and child psychiatry, spending most of her time at VUMC. She was in private practice from 1993 to 1996 at Middle Tennessee Psychiatric Clinic. Her survivors include her husband, Frederick; two sons, Kofi and Saaed; a stepson, Kvaiven; and her parents.

Dr. Horace G. Bramm, HS'55-56, died of a heart attack on January 7, 1998. His wife, Joe L., survives him.

Dr. Joseph Robert Bowman, MD'33, died April 27, 1999. He was 92. He was a pioneer in the field of pediatric surgery, being one of three in the United States after completion of his residency. He retired from medicine in 1990 after 57 years of practice. He is survived by his wife, Mary Margaret, three daughters and one grandson.

Dr. Walter E. Culpepper, HS'61-'64, died on Jan. 15, 1998 at the age of 62. His wife, Carolyn, survives the Richmond, Texas resident.

Loren H. Hoffman, Ph.D., professor of Cell Biology and a member of the Vanderbilt faculty for three decades, died on April 27, 1999 after a lengthy illness. Though a noted researcher, Hoffman was perhaps best known for his rapport with a generation of Vanderbilt students. Hoffman is survived by his wife, Barbara; son, Paul; and daughter Allison.

Dr. John Chandler Hume, MD'36, died of pneumonia on February 16, 1998. He was 86. Hume, professor emeritus of health policy and management and dean emeritus of the School of Public Health at Johns Hopkins, was an international authority on venereal disease treatment and eradication. He is survived by his wife, Amelia, and children John C., Jr., William and Susan.

Blanche Davis Kampmeier, wife of the late Dr. Rudolph H. Kampmeier, former professor of Medicine at VUMC, died June 20, 1999. A daughter, Joan, three grandchildren and five great-grandchildren survive her.

Grace McVeigh, a biochemist and longtime supporter of Vanderbilt University medical research, died on June 28, 1999 in Nashville. She was 98. McVeigh donated money toward five scholarships for Vanderbilt University medical students and was also one of the founding members of the Canby Robinson Society. She once considered a career in medicine and was accepted into VUSM but decided, however, to get a degree in biochemistry and spent the next 30 years mapping out regions of the world with rich reserves in oil for the Atlantic Richfield Co.

Dr. Jefferson E. Morris, HS'50-'51, died on Jan. 20, 1998. He resided in Fairhope, Ala.

Dr. Gabe A. Payne, Jr., MD'43, died on April 13, 1999. He was 80. Dr. Payne was a pediatrician and former chief of staff at Jennie Stuart Medical Center in his native Hopkinsville. Surviving are his wife, Maybelle Paxton Payne; their three daughters, Katherine Morris, Karolyn Bell and Anne Nicastro; five grandchildren; and one great-grandchild.

Dr. Julian S. "Dutch" Reinschmidt, MD'53, died from leukemia on June 16, 1998. Reinschmidt, senior associate dean emeritus and former associate dean of continuing medical education for the Oregon Health Sciences University School of Medicine, resided in Lake Oswego, Ore. Reinschmidt was known nationally for his 30-plus years of expertise in continuing medical education, and for his leadership in Oregon and across the U.S. in addressing the medical needs of rural communities. He is survived by his wife Maxine and daughter Sandra.

Your classmates want to hear from you

Tell us about your promotion, latest family addition or life changing experience.

Send news to:

Vanderbilt University

Medical Alumni Affairs

D-8200 Medical Center North

Nashville, TN 37232-2106 (or)

email: medalum@mcmail.vanderbilt.edu

Stewart Lawwill Jr.
 Archie L. Lester +
 Carolyn Howard McKinley +
 Edwin A. Meeks +
 Margaret P. Veller *+
 Robert J. Williamson +
 Joseph I. Zuckerman +

1951

Eugene L. Bishop Jr. *+
 John Roselius Bowman +
 Norman M. Cassell *+
 John M. Clariday
 Nancy M. Clish +
 John Howard Coles III *
 Robert D. Collins Sr. *+
 Paul C. Elzey
 Clarence E. Gossett +
 Paul Johnson Jr. *+
 M. Kenton King *+
 Nina Koulischer +
 Charles H. Marks +
 Jefferson C. Pennington Jr. *
 Thomas G. Pennington *+
 Doris E. Pipkin
 Fawzi A. Pualwan
 Richard H. Sundermann *+
 Nathaniel H. Talley Jr.
 W. Phillips Tinkler *+
 John Thomas West *
 Gottrell H. Wright +

1952

Jerome H. Abramson *+
 Joseph C. Bailey +
 Oscar C. Beasley
 Charles C. Brock Jr.
 Arthur L. Brooks +
 Louis Bryan *+
 Richard Davis Cole
 Duvon C. Corbitt Jr.
 Phyllis D. Corbitt
 Royce E. Dawson +
 Robert H. DeLano +
 Thomas C. Delvaux Jr.
 R. James Garrison +
 Guy T. Gillespie Jr. *
 Theodore J. Haywood *
 Virgil M. Howie
 Taz W. Kinney *+
 Lawrence H. Lassiter
 William Raymond Norman Jr. +
 Fred S. Pipkin Jr.
 Gene T. Qualls +
 Robert M. Roy *
 George E. Scott
 Robert S. Stempfel Jr. +
 John M. Tanner *+
 William B. Wadlington *+
 Oscar Weir Conner III +
 Joe G. Cromeans *+
 George C. Curtis III
 J. Edward Fisher
 Paul A. Green Jr. +
 Thomas R. Harwood *+
 Lester L. Hibbett +
 Cecil B. Howard +
 Richard L. Lester Jr.
 Jack Martin *
 Jeff R. Moore
 John Q. Owsley Jr. *
 Milton B. Peeler
 Judson G. Randolph *+
 John T. Rawlings
 Alexander S. Townes *+
 John Robert Williams Jr. +
 Nat T. Winston Jr.

1954

Wyatt Heflin Blake III +
 John W. Boldt *+
 Swan Brasfield Burrus *
 Henry A. Callaway Jr. *+
 John P. Canby
 Sam W. Carney Jr. *
 James R. Drake +
 W. T. Dungan +
 John H. Griscom
 Carl A. Grote Jr. *+
 B. Leslie Huffman Jr.
 John B. Isom +
 Joseph E. Johnson III
 Herman J. Kaplan *+
 Bernard Mathis Malloy *+
 John H. Marchand Jr. +
 W. Shands McKeithen Jr. +
 Rex McReynolds Jr. +
 Samuel H. Paplanus +
 Robert M. Reed +
 Joseph C. Ross *+
 Paul W. Scott +
 William S. Stoney Jr. *+
 John T. Sugg III
 Sorrell L. Wolfson +
 E. Reynolds Young

1955

John Benjamin Bond +
 Jean A. Cortner *+
 June A. Foley +
 Angus W. Graham Jr.
 Saul S. Haskell
 Charlie Joe Hobdy +
 Robert Gordon Long *+
 Arthur E. Lyons *
 Clifton K. Meador
 Charles H. Nicholson *
 Phillip P. Porch Jr.
 Walter C. Puckett III *
 Robert E. Ray +
 Eugene M. Regen Jr. +
 Vernon H. Reynolds *+
 Jack O. Rice +
 Robert S. Sanders +
 Marvin H. Schwartz +

1953

Thad J. Barringer Sr.
 Charles Leon Branch
 Donald M. Bryan *+
 William J. Callison
 Bennett W. Caughran +

Myron R. Stocking

1956

Larry H. Beisel
 Dixon L. Bieri
 Raymond Karl Bopp
 James M. Callaway *+
 Robert B. Couch +
 John C. Gillen *+
 Ruth M. Hagstrom +
 William N. Jernigan *
 Russell L. May *+
 Robert B. Miller +
 Ralph L. Nachman +
 Alexander W. Pierce Jr. +
 Jourdan A. Roane
 Richard O. Russell Jr. *+
 Robert T. Spalding *
 Charles R. Thompson Jr.
 John S. Warner *
 Gerald L. Wolf +
 Otis B. Wooley Jr.
 W. Murray Yarbrough III

1957

James A. Carratt
 Marshall A. Diamond +
 John Donald Gass
 Joe Wheeler Grisham
 James W. Hays +
 Robert A. Johnson +
 Stewart G. Jones
 William H. McCreary Jr. +
 L. Clifford McKee Jr. +
 Thomas M. Minor
 John J. Sandt
 W. Wike Scamman
 Samuel E. Scott
 W. Anderson Spickard Jr. *+
 Gerald E. Stone +
 Walter N. Stone +
 Hugh L. Sutherland Jr.
 Tandy W. Treadwell Jr.

1958

R. Benton Adkins Jr. *+
 Burton R. Bancroft Jr.
 Jack M. Batson Sr.
 John P. Blackburn
 Paul J. Fatum +
 William F. Fleet Jr.
 Robert C. Franks *+
 Paul U. Gerber Jr.
 John L. Glover *
 David W. Gray *+
 Walter P. Griffey Jr. +
 Kent Kyger *+
 W. Gardner Rhea Jr.
 Harold H. Sandstead *
 Burton Silbert *+
 James D. Snell Jr. *+
 Charles W. Taylor +
 Thomas A. Waltz Jr. *+
 Myron R. Stocking

1959

Andrew H. Abernathy III +

Waleed N. Amra
 William C. Anderson *+
 Gene V. Ball
 James E. Blackburn II +
 Thomas R. Cate *+
 Robert T. Cochran Jr.
 Robert K. Dorton *+
 George F. Grady +
 Murray Heimberg +
 Rodrick J. Hinshaw
 Gordon Hollins *+
 Jack A. Jaffe *+
 A. Myron Johnson
 Philip C. Jolly +
 Erwin A. Jones Jr. +
 George A. Luther
 Merrill D. Moore Jr.
 Harry Lee Page Jr. *+
 Robert A. Partain III +
 Robert E. Richie *+
 Joseph Roy Shackelford III +
 F. Michael Shepard +
 Alexandre Solomon +
 William David Strayhorn III
 E. Dewey Thomas
 Warren A. Weinberg +

1960

J. Durwood Bradley *
 Alan J. Brown *+
 Benjamin H. Caldwell Jr.
 Lawrence S. Cohen
 Ronald R. DiNella +
 Malcolm P. Duncan
 William H. Goodson Jr. +
 Buford T. Harris *+
 John D. Hutcherson *+
 Frank A. Loda +
 Mary L. Michal +
 Robert S. Moorman Jr. *+
 Jonathan O. Partain *+
 S. Peter Ravitz
 Julia E. Sawyers *+
 Joe Steranka
 William P. Stone Jr. +
 Paul R. Stumb III +
 Clarence S. Thomas Jr. *
 Andrew William Walker +
 Arville V. Wheeler Sr. *+
 Lawrence K. Wolfe *+
 Waleed N. Amra

1961

Lawrence M. Abrahams +
 Robert H. Alford +
 Richard D. Buchanan *+
 James R. Cate
 R. Paul Clodfelder +
 R. Jack Freeman
 Phillip Gorden *+
 Cauley W. Hayes *+
 Richard A. Heimbürger +
 Noel C. Hunt III *
 Jerry M. Jernigan +
 John S. Johnson *
 Robert M. Johnson *
 Richard B. Johnston Jr. *+
 James Centre King Jr.
 Richard T. Light *+
 Edward E. Litkenhous Jr. *+
 John A. Logan III +
 C. McGavock Porter *+
 Sorrel S. Resnik
 Lucian L. Tatum Jr. +
 William T. Youmans *+
 Waleed N. Amra

James Centre King Jr.
 Richard T. Light *+
 Edward E. Litkenhous Jr. *+
 John A. Logan III +
 C. McGavock Porter *+
 Sorrel S. Resnik
 Lucian L. Tatum Jr. +
 William T. Youmans *+

1962

William A. Altemeier III +
 Oscar B. Carlisle +
 James E. Collins
 Charles Lindsey Cooper +
 Warren W. Davis
 O. Thomas Evans Jr. *+
 A. Carvel Gipson Jr.
 James W. Green
 Harriet M. Harman +
 Jerry K. Humphreys *+
 Frederick Lasker +
 Harold L. Moses *+
 John D. Pike +
 James E. Russell *+
 Joseph T. Saiter Jr. +
 Marvin E. Schmidt
 Roger L. Swingle *+
 Linton B. West Jr. +
 C. Courtney Whitlock Jr. *+
 Dale A. Wilson

1963

Chester R. Burns +
 Henry K. Butler Jr. *+
 William L. Downey +
 Daniel C. Geddie *+
 Gordon N. Gill +
 Robert P. Goodman
 Murphy H. Green *+
 Louis G. Horn III
 Robert W. Ikard *+
 Joseph F. Lentz
 H. Newton Lovvorn Jr. *+
 Thomas M. McCutchen Jr.
 Billy Sam Moore *
 Ronald E. Overfield *+
 James M. Perry Jr.
 Joe A. Pinkerton Jr. +
 Howard E. Rosen +
 Harry C. Stephenson *
 James B. Threlkel *
 John H. Walsh *+
 Michael B. Wilhoit +
 Roy R. Wright *
 Waleed N. Amra

1964

Joseph A. Cook *+
 Charles King Davis Jr. *+
 Wallace B. Duffin +
 Theodore A. Feintuch +
 Abe R. Fosson Jr. +
 Raymond M. Fox Jr. *+
 Milton Frank III
 Stanley E. Graber +
 Erich B. Groos +
 Jack D. Hagedwood

Larry J. Hall *
 John T. Jones
 Robert E. Lawler
 Alexander R. Lawton III *+
 Lewis Dubard Lipscomb
 Alan S. Rosenthal
 Elliott G. Segal
 K. Shannon Tilley
 Charles Richard Treadway *
 William L. Underwood +

1965

H. Verdain Barnes +
 Walter F. Barnes +
 Frank Henry Boehm *+
 John C. Brothers *+
 Robert M. Carey
 Charles M. Carr +
 W. Carl Dyer Jr. *
 James Owen Finney Jr. *+
 Richard M. Helman
 Patrick L. Jasper +
 Harold Lasker
 Alfred Wayne Meikle +
 Lee J. Silver
 Walter Smithwick III *
 Charles E. Terry +
 Barry H. Thompson *+

1966

John B. Breinig *+
 Kenneth L. Brigham *+
 Raymond R. Crowe Jr. *+
 Philip H. Davis *
 Gerald Domescik *+
 John Joel Donaldson
 Jimmy G. Finley *+
 Gordon P. Flake +
 Howard H. Frankel
 Felix A. Hughes +
 Albert L. Kerns
 Richard H. Mathews *+
 Alvin I. Mushlin +
 John B. Neeld Jr. *+
 T. Joseph Pond Jr. +
 A. Preston Russell
 Sylvia R. Seamands
 John S. Sergent *+
 William J. Shasteen *+
 William E. Thornton
 Walker M. Turner Jr. +
 Robert F. Wiley Jr. +

1967

Oren W. Babb +
 Robert H. Carnighan
 H. Austin Carr
 William J. Chesnut III *+
 John L. Christensen +
 Samuel H. Dillard Jr. *+
 John Herman Dixon Jr. +
 John W. Dorman
 Arthur M. Freeman III *+
 Alan H. Fruin *+
 David W. Gregory
 Henry L. Harrell Jr.

Samuel P. Hawes III
 Inpow David Hong +
 Antoinette Foote Hood
 David L. Hudson *+
 William D. Johnston *+
 Allen B. Kaiser *+
 John M. Leonard *+
 T. Alan Ramsey
 Herman D. Sorensen +
 William R. Welborn Jr. *+
 Thomas Allen Woodward

1968

Howard M. Alig +
 Ronald L. Alt
 Joseph S. Atkinson +
 R. Stewart Bauknight
 George Carter Bell +
 William Henry Brewer *
 Ponce D. Bullard Jr. *+
 Raymond F. Burk Jr. *+
 Carolyn M. Chesney *+
 L. W. Dowlen Jr. +
 Robert C. Dunkerley Jr. *+
 James R. Dzur
 David R. Hunter *+
 Godela Reising Iverson
 James G. Killebrew Jr. *
 Jerry R. Mitchell *+
 Sally Zieverink Monroe +
 Stephen P. Mowry *+
 Rebekah Ann Naylor
 J. William Nuckolls +
 Thomas W. Orcutt *+
 Soja Park-Bennett *+
 Allen L. Schlamp *
 James A. Settle Jr. *+
 Stewart P. Smith Jr.
 Peter J. Townes +
 Marvin H. Vickers Jr. *+
 Robert S. Young Jr. +

1969

Robert B. Barnett *+
 James A. Bentley Jr. *+
 Thomas M. Brown Jr. +
 Thomas M. Chesney *+
 Richard E. Dixon
 Robert Stanley Francis *
 John W. Garrott +
 James H. Growdon Jr. *+
 Norman Don Hasty *
 Bruce E. Herron *+
 Robert W. Higginbotham
 Everette I. Howell Jr. *+
 Ellen E. Hrabovsky *+
 John C. Johnson Jr. +
 Douglas P. Mitchell *+
 M. Kent Moore *+
 Wyatt E. Rousseau *+
 Larry D. Scott +
 Robert T. Snowden +
 David H. Walker +
 Jackson B. White IV +
 Ronald B. Workman *+
 Vernon T. Worrall III

1970

William C. Alder +
 Paul S. Ambrose +
 William B. Baine +
 Thomas W. Bennett *+
 Charles R. Bentz *+
 Judy F. Burroughs
 S. Frank Carter III +
 Glenn R. Carwell
 Clark R. Cobble +
 John H. Crothers +
 Frederick B. Emerson Jr.
 Robert B. Faber *
 John O. Fitts *
 David E. Fleischer *
 Steven A. Goldstein +
 Harold A. Hatcher Jr. +
 Robert L. Hendley +
 Herman A. Jenkins +
 Douglas L. Jones +
 Conn M. McConnell *
 Thomas A. McKenzie III *+
 James T. Rhea +
 Bruce W. Romick
 Phillip M. Rosenbloom *+
 Stephen E. Rostan *+
 William J. Schneider *+
 John Leeman Tarpley *+
 Robert H. Walkup Jr. +
 Thomas C. Whitworth *+
 Daniel K. Winstead +
 Robert S. Young Jr. +

1971

Arthur C. Andreasen
 Kendall T. Blake +
 Glenn H. Booth Jr. *+
 Arthur E. Broadus +
 Daniel D. Canale Jr. *+
 Thomas S. Claiborne Jr. *+
 Donald S. Crumbo *
 Joe C. Culbertson
 J. Lucia Davis *+
 Emanuel O. Doyne +
 David M. Gershenson
 Edward M. Gotlieb
 Roland E. Gower *+
 Cheryl Greene
 Edwin L. Grogan +
 Peter L. Grossman *+
 J. Chris Hawk III *+
 Warren A. Hiatt Jr.
 Joseph W. Huston III +
 Raymond P. Kloepfer II +
 Kenneth Margolis +
 James W. Mathewson
 Jane A. Mays *
 Wallace W. Neblett III *+
 Richard R. Oldham *+
 Jon B. Olson
 Richard D. Olson
 Lathan Edwards Settle *+
 George Merrill Shore *+
 Gregory J. Skarulis *+
 John G. Slater Jr. +
 William W. Tomford +

Robert J. Trace Jr. +
 Kenneth F. Tullis
 Harrison D. Turner *
 Stanley E. Von Hofe *+
 Robert J. Trace Jr. +

1972

Neil A. Breslau +
 Steven J. Burnham +
 Richard A. Davidson +
 Robert C. Erickson II *
 Marjorie Fowlkes +
 Thomas R. Fuller Jr. *+
 James H. Gilfoil IV +
 Edward R. Green +
 J. Brevard Haynes Jr.
 Elizabeth W. Hill
 Louis J. Katzman *+
 W. Ben Kibler *+
 Kenneth F. Luckmann +
 Sally S. Mattingly +
 G. Patrick Maxwell *
 Albert W. Morriss III *+
 Gary E. Penner *+
 Ron N. Rice +
 William W. Robertson Jr. *
 William L. Smead *+
 Robert J. Stine +
 Ervin M. Thompson
 William D. Wehunt
 James H. Whiteside *

1973

Milton H. Anderson III *+
 Gustav A. Blomquist Jr. *+
 L. Ward Close +
 Richard John Davis *+
 John Holland Dixon Jr. *
 Bradford W. Edgerton
 Owen Beverly Evans Jr.
 Richard T. Hoos *
 Jonathan S. Jacobs
 John Howard Judd Jr. *
 Vincent L. Keipper
 William T. Mattingly Jr. +
 Thurman D. McKinney *+
 John F. Ogburn III
 F. Raymond Porter *+
 Thomas A. Powers *+
 Winchell W. Quock +
 James A. Ramsey
 Jesse H. Rigsby III *+
 Michael B. Schwartz
 Michael C. Trueblood *+
 Thomas E. Wex +
 Claude H. Workman III

1974

James E. Alexander Jr.
 Julian P. Alexander III
 Victor C. Baum +
 Stephen Mayes Becker
 Clem H. Block Jr.
 Cynthia L. Bowman
 Teresa Sue Bratton *+
 John Bruno III +
 Brian R. Carlson *

James L. Connolly +
 Michael Critchlow
 Michael L. Crowley +
 Carla M. Davis *+
 William A. Growdon
 Robert L. Harbin
 William P. Harbin II +
 Don P. Herring
 James W. Hoback Jr. +
 Jack T. Hopkins Jr. *
 J. Thomas Latham Jr. *
 Robert E. Mallard +
 George C. Martin +
 Thomas L. McCurley III + *
 Charles R. McKeen *+
 David H. Morgan
 Philip R. Morgan *
 Richard J. Plunkett
 Keith J. Rosing *+
 Wilson G. Russell
 Michael B. Ryan
 Stephen P. Simmons *
 John E. Sutphin Jr. +
 David D. Tanner
 John B. Thomison Jr. +
 Philip C. Van Hale *+
 R. Henry Williams

1975

Frank M. Balis +
 Michael Barry Brenner
 J. Michael Conoyer
 Michael L. Craighead
 Robert W. Donnell *
 Charles E. Dyer +
 Luke L. Ellenburg Jr. +
 Harold G. Erath Jr. *+
 Edward P. Fody Jr.
 Caroline LeConte Gibbes
 Neil A. Green *+
 Michael G. Gutknecht *+
 Russell Harris Jr. *+
 Robert C. Hartmann Jr. +
 Laykoon Huang +
 Suzanne S. Love +
 Duncan B. McRae Jr.
 Steven A. Meixel
 Robert M. Moore
 C. Andrew Pickens
 Robert S. Quinn +
 W. James Robbins
 Deborah Stewart Ruark +
 Richard M. Silver +
 Robert W. Spohr *
 Charles A. Stilwell Jr. +
 Gary D. Swanson +
 William D. Tench *
 Anthony E. Trabue
 Todd S. Wilkinson *+
 R. Bruce Williams +
 C. Michael Wolff

1976

Dave Almon Alexander Jr.
 Thomas W. Ballard *+
 Robert R. Bendt

Betsy D. Bennett +
 Jeffrey H. Brown +
 Ruskin W. Brown *
 Carla Bloedel Clark
 Dan Ellis Connor
 William A. Curry +
 Thomas S. Evans +
 Stephen G. Hendrix *+
 Dan A. Henry *+
 James M. Hinson Jr. +
 H. Douglas Holliday *+
 Fred M. Howard Jr. +
 John W. Interlandi +
 Mark M. Kramer
 Philip K. Lichtenstein *+
 Michael A. Lojek *+
 Daniel E. Martin +
 James W. Menzie +
 J. Robert Polk Jr.
 Michael S. Rees
 Adam A. Rosenberg +
 Joe C. Rutledge
 William J. Sanders IV *
 George B. Schimmel
 L. Reed Shirley

Marilyn B. Lemos
 Joseph A. Little III *+
 Linda S. Lundin
 Sidney D. Machevsky +
 Stewart C. Mann
 Linda Carol Mayes
 Joseph R. McMullen +
 Robert D. Murphy
 John H. Nading
 John W. Neblett Jr.
 Timothy F. Nolan Jr. +
 Stephen W. Reuben
 Paul A. Rosenblatt *
 Calvin R. Shaffer *+
 Jerry L. Shenep +
 Brian A. Truxal
 Mark A. Whiting +

1978

Susan Toy Andrews +
 Katherine Kirkeminde Bass
 Curtis L. Baysinger +
 Christopher J. Begley
 Daniel H. Belcher
 Ian M. Birkett

Donna Jacobi Pruett +
 Michael E. Richards
 Dan S. Sanders III
 Timothy Porter Schoettle *+
 Sally E. Self *
 Ira Alan Shivitz
 Gary B. Strong +
 Ramona Walsh Trabue
 William Vernon Whitaker
 Michael S. Wolfe *
 Mary Ella Zelenik *
 P. Kevin Zirkle *+

1979

Lowell Brian Anthony
 Dorsey Machir Bass Jr.
 J. Michael Bolds
 Phillip Lawrence Bressman
 Robert L. Chess +
 Laura Nelle Connor
 Linda Ann Danieu +
 James Phillip Davis Jr.
 William Craig Eason +
 Kathleen F. Fischer
 Bonnie Friebling

Kenneth Raye Washington
1980
 Anthony N. Brannan +
 Donna Leslie Bratton
 Deborah M. Bryant *+
 David John Bylund *
 Gary Ellis Carnahan +
 W. Winn Chatham +
 David John Clymer +
 Jeffrey Paul Cooper +
 Steven Harris Dowlen +
 Raymond George Dufresne Jr.
 Katherine Claire Edwards *+
 Lee Wayne Erlendson
 Jeffrey C. Fosnes
 Andrew Joseph Friedman +
 Lawrence English Gage +
 Mark A. Greenberg +
 Steven R. Hanor
 James Taylor Hays +
 Dean Alan Healy
 Halden Wayne Hooper Jr. +
 Charles E. Hornaday Jr.
 James A. Johns *+

Daniel Lawrence Dale
 Charles Stoddard Eby
 James Mark Edwards
 William H. Edwards Jr. *+
 Steven D. Fayne +
 Agnes Borge Fogo
 Howard Adam Fuchs
 Walter Brian Gibler *
 Mark E. Gillespie +
 James Robert Glassner
 Stuart H. Gold +
 James Foster Graumlich
 William Julian Gregory +
 Daniel Payson Hunt +
 Peter Charles Jacobson +
 Peter Edward Jensen
 Lee W. Jordan
 Christopher D. Lind *+
 Martha Hempfling Lund *
 William Andrew Lutin
 F. Bradford Meyers
 L. P. Moore III
 Craig Michael Morgan
 Steven F. O'Sheal *+
 Mark Kevin Parsons +

The Canby Robinson Society, the largest donor society of Vanderbilt Medical Center, added over 100 members to its ranks last year. Steady growth in membership over the last few years has enabled the society to fund an additional full-tuition scholarship to a gifted medical student, bringing the total number of CRS scholars to sixteen. Many alumni generously give at the CRS level and are especially acknowledged in these pages.

Peter W. Stacpoole
 Richard S. Stahl +
 Clifford Randolph Tillman *
 Karl Steven Wagner
 David C. Wymer +
1977
 Salim S. Akrabawi +
 Rex E. Arendall II
 Edward S. Arnold
 Samuel A. Brody
 Joseph M. Brogdon Jr. +
 Ronald W. Bronitsky +
 David L. Buch +
 Henry F. Chambers III
 Douglas Allen Clark
 Debra Atkinson Cutler
 Jerald S. Dudley +
 James W. Felch +
 Ted E. Garrett *+
 John M. Herre
 Peter O. Holliday III
 John G. Huff
 Henry S. Jennings III *+
 Roger C. Jones
 Lawrence A. Judy +
 Lon A. Keith
 Robert H. Latham
 John Willis Lea IV *+

Michael E. Brown
 Jeffrey B. Carter *
 John T. Cobb *
 Robert C. Cohn
 James R. Cooley
 Philip L. Custer
 Darlene Dailey Eason +
 John A. Grimaldi Jr. +
 Ronald W. Hamner *
 Sandra G. Hassink
 C. Bomar Herrin *+
 Charles B. Huddleston *+
 Lillian L. Israel
 Carl M. Johnson +
 Janis A. Jones
 John Richard Jones *+
 K. Bruce Jones *
 Stephen L. Jones *
 Rodger A. Liddle
 Michael L. Maggart *
 Michael A. Malpass
 Roy Douglass Markham
 Thomas W. Nygaard *+
 Edson O. Parker III *+
 Pamela Joan Parker
 Robert B. Parker
 Neil Hamilton Parnes +
 Steven F. Podgorski
 Ann Hutcheson Price *+

William K. Funkhouser Jr.
 Susan Brittingham Gregg +
 Richard Major Hilborn
 William Thomas Johanson
 Royce Etienne Joyner *+
 Ronald Jay Kanter +
 James Michael Kleinert
 Charles D. Knight Jr.
 Barbara Ann Konkle
 Vathsala Krishnamurthy
 Joel Ardell Lees
 J. Scott Millikan +
 Robert C. Murphy Jr. +
 Susan Niermeyer *+
 Thomas Operchal
 John Robert Palmer
 Cary W. Pulliam
 Kristen B. Raines *
 Albert Augustus Ramage III +
 Peter Carey Rawlings
 Thomas Arthur Richey
 Thomas W. Rigsby Sr. +
 Samuel A. Santoro +
 Preston Riordan Simpson +
 Michael Joseph Sineway
 Timothy D. Stryker
 Thomas E. Tompkins
 Denise Kay Van Horn
 Woodford Spears Van Meter

Karla J. Johns *+
 James Edward Johnson
 Thomas Keith Jones
 Audrey Jean Kline-Bylund
 Deborah Lightner *
 John E. Linn
 Rex Monroe McCallum
 Robert H. Miller III
 Charles Wright Pinson *+
 Mark Allan Piper
 David Bruce Ross +
 Clive Hamilton Sell
 Bruce William Stavens
 David Michael Stoll
 John Marcus Wharton +
 Mark Richard Winters +
 Robert Harold Wise Jr.
 John L. Wolford Jr.
1981
 Howard Cobb Alexander Jr.
 Stephen Kenn Beeman
 Adam Scott Bennion
 Erol Martin Beytas +
 Linda M. Bound +
 Margaret Mary Brennan *+
 Joel Raymond Buchanan Jr.
 Thomas Frederick Byrd III
 Edward Russo Carter

Susan Lynn Pflieger +
 Valerie Jean Rappaport
 Robert Allen Rogers +
 Alan Stuart Routman *+
 Lawrence L. Sanders Jr.
 Lewis Karl Schragger
 William C. Sippo
 Paul H. Smith Jr.
 Albert T. Spaw
 Thomas J. Sullivan +
 Mary Conti Swintoniowski
 Joseph Allan Tucker Jr.
 Mary I. Yarbrough *
1982
 Eloise Lundberg Alexander
 William Mark Baker
 Russell Thomas Barr +
 Douglas Donald Brunette +
 Allen Robbins Craig
 Michael Andrew Czorniak +
 Cynthia Ann Donnell
 Barbara J. Earnest *+
 Webb Johnston Earthman +
 Maria Frexes-Steed *+
 D. Catherine Fuchs
 Carl Richard Hampf +
 Robert Greg Harris
 Lisa Anne Hendrickson

VANDERBILT UNIVERSITY MEDICAL CENTER

Melanie Voncile Hinson
 Alice A. Hinton *
 Rick Alan Howard
 William Savage Hutchings II
 Mary Dimock Lupinetti +
 Steven Michael Marsocci
 Kevin D. Martin +
 Michael E. McCadden +
 William Davis McConnell +
 Scott Wallace McMurray
 Walter Jerry Merrell
 Robert F. Miller *+
 Ted Jonathan Miller
 Karl E. Misulis *
 William Robertson Moore +
 Walter M. Morgan III *+
 Allen Jay Natow *
 Elizabeth Katheryn Neuzil +
 Curt Ira Parnes +
 Eric Morgan Peck +
 Joe Beeler Pevahouse +
 Douglas Brian Pritchett +
 James Albert Reynolds
 Bruce Earle Richards +
 Courtney Shands III *
 Stephen Victor Sobel
 Richard Glen Stiles +
 Henry Geoffrey Watson *
 Michael Bruce Wert +
 Patrick E. Wright Jr.

1983

Mark Charles Adams +
 Jack William Aland Jr.
 John Alan Andrew
 Lori Rothstein Andrew
 Richard Ralph Boesel
 Dennis Bonner *
 David Allan Burack +
 Jeffrey Lynn Deaton +
 Robert Paul Dolan
 Jonathan Charles Dunn
 Blair Dillard Erb Jr. *
 Ira Kenneth Evans III
 Ann Regina Falsey +
 Nelson Curtis Frink +
 Jeremy Mark Geiduschek +
 David William Haas
 John Lowell Holbrook +
 Christine K. Jacobs
 William T. Klope Jr. +
 David Nathan Korones +
 James Michael Krafcik
 Eric R. Kreutzer +
 Laurie Lawrence +
 Mark Lee Lipman
 Samuel Jay McKenna *+
 Wayne Murphy +
 Constantine William Palaskas
 Lee Edward Payne
 Mark Eugene Petrik *+
 Mark John Price +
 Theodore Feld Reiss
 David Paul Robinson +
 Steve Gary Salyers +
 Linda Lou Smith +

Michael Carmine Tigani +
 William Joseph Travis
 Eric Alan Wiebke
 Jennifer Craig Wiebke
 Ronald Ray Winek +
 Hunter Earl Woodall +

1984

Mark Donald Anderson
 Robert Michael Aris +
 Patricia L. Barnwell
 Harry Howard Brown +
 Margaret Linn Catanzariti
 Robert Douglas Cebul
 Peter Gerald D'Amour +
 Carlos Rene Dalence
 Barbara Theresa Dubiel +
 Caren Elizabeth Gaines
 Frank John Greskovich III
 Douglas Howard Hamilton
 Larry Steven Hunt
 Jonathan David Kirsch +
 Steven Lewis Klein
 Gerald Paul Konrad
 Nancy Broady Lataitis
 Laura Jo Lehmann
 Richard Louis Maas +
 Loren Hess Marshall
 William Henry Matthai Jr. +
 Jack Bass McCallie +
 Benjamin Dee McCallister Jr.
 Joseph Edward McCullough *+
 Julie A. McLaughlin +
 Rolf Walter Meinhold
 Cheryl Ann Menzies
 Philip E. Neely *+
 Catherine Carol Ohsiek +
 Steven P. Petrou +
 Mark Taffel Pollock +
 Charles Gene Pribble
 Denise Raynor
 Thomas Markus Roesch *+
 Frank John Schlehr Jr.
 Kevin Stewart Shea
 Paul John Tobben
 Robert E. Tonsing *+
 Sara M. Tonsing *+
 John West Van Wert
 Randall Paul Wagner
 James Alan Whitlock
 Robert Theodore Wilder
 David Mark Wolf +

1985

Beth Abels +
 Tim Eugene Adamson
 Jeffrey Peter Alpert +
 Steven Allen Barrington
 Kenneth Eugene Berkovitz *+
 G. Blaine Bishop Jr.
 Timothy Alan Burke *+
 Jeffrey Charles Carlton *+
 Karen Alice Clemency +
 John Franklin Cooper +
 Susan Patricia Davis
 Steven Don

Louis George Dusseault Jr. +
 Mark William Elliott
 Tahsin Mark Ergin *+
 Robert Vito Farese Jr. *
 Francis Miller Fesmire Jr. +
 James William Gigantelli Jr. +
 Robert Frederick Glenn +
 W. Quinton Gurley Jr. *+
 David Leonard Harshman +
 Richard James Hempel
 Linda Isaacs +
 John Edwin Jayne
 Richard Johnston Jr. *+
 Nancy Allen Klein
 Gregory M. Lewis *
 James Van Little III *+
 Neal Jay Meropol
 Sharon Bloom Meropol
 Sharon Wyatt Moore +
 Dennis Pearman +
 Michael Pietro
 William Howard Polk Jr.
 David Grady Ratcliff
 George Daniel Rath
 Edmund William Raycraft +
 David Franklin Rhodes +
 Matthew Brandl Rossi
 Mark Edward Shogry +
 Elizabeth Barlow Simpson +
 Keith Alexander Thompson
 Sonya Mariam Vaziri
 Phillip Ashley Wackym
 Stephen Gregory Werth *
 David Marvin Wheeler
 Robert Christopher Wille
 Alan Thorne Williams
 Laura E. Witherspoon *

1986

Newton Perkins Allen Jr. *+
 Douglas Carlton Altenbern Jr. +
 John Eugene Anderson
 Jeffrey Lawrence Ballard +
 Jennifer Lynn Bell
 Katherine A. Bertram *
 Michael Stephen Citak
 Claudia Lou Clopton
 Douglas Wayne Dothager *
 Marcia J. Egles
 Mary Ann Foster +
 David W. Grambow +
 Richard M. Gray *
 Daniel Moyer Hartmann
 Michael James Herhusky
 Roland Arthur Hester IV *+
 Stuart Mark Jacobson
 John Amis Jernigan +
 Joyce Evelyn Johnson *+
 Amy Meredith Joseph +
 Paul Dominic Kountz Jr. *
 Julie Robin Lange
 Kristin Levitan
 Craig Harrison Linger
 Alexander Locke III
 Rachel Lenox Mace *+
 John W. Macey Jr. +

Bess Adkins Marshall
 Daniel Charles Mayes +
 Cynthia Elizabeth Mayfield
 Robert Wallace McClure
 Daniel Richard Mitchell
 Diane Elizabeth Oliver +
 Christopher Kennerly Payne *
 R. Stokes Peebles Jr. *
 Mark Puder
 Richard Epes Rainey +
 Neal Edward Ready +
 DeeAnn Marie Stroop
 Sally Thomas Wareing
 Joseph John Wujek *
 Lucy L.H. Yang *+

1987

Clinton Mark Anderson +
 Gregg Anthony Baran +
 Gilbert Erich Boswell
 Stephen Paul Bradley
 Steven Edward Braverman
 William Carroll Burnette Jr. +
 David Allen Cook
 John Allen Crow
 Gregory George Davis
 Bart Joseph DeBrock +
 Russ David Erman +
 Roy Tyler Frizzell *
 John D. Gazewood
 Timothy Gerard Givens +
 John Caldwell Harrison +
 Richard Lloyd Hock
 Sally H. Houston *+
 Dan Todd Johnston +
 Stephen Curtiss Klasson
 Laura Lynn Layer
 Douglas Walter Lowery III
 Carol Jean Martin
 Theodore Tillman Miller
 Eugene Harris Nelson
 Elizabeth Nilles
 Paul Daniel Pearigen +
 Barbara A. Pockaj +
 Laura Jean Rames
 Ross Alan Rames
 Neil Mark Richtand +
 Karen Bowen Roden
 Mark Warren Russo
 Robert Anthony Sciortino *+
 Daniel Edward Smith Jr.
 Troy Farr Storey *+
 David Edmond Taylor
 Van Russell Wadlington *
 Malcolm Houston Weathers III
 Douglas Ray Weikert
 Thomas Alexander Wilson Jr.
 Mark Thomas Worthington

1988

Adam Combs Abram *
 Darrington Phillip Altenbern +
 Debra Marie Auble
 Brett Ronald Bartlett *+
 Thomas Arthur Biggs
 Raymond F. Bluth Jr. *+

Alice Clark Coogan
 Philip Gerlach Coogan
 John P. DeVincenzo III
 Calvin Robinson Dyer
 Erin S. Fogel
 David Aiken Gaston II +
 C. Henry Griffith III +
 Paul Jacob Heil +
 Robert Eugene Ivy II *
 Thomas Stevan Johnston +
 Michael Robert Jordan +
 Mark Randall Kaplan +
 Gregory Cole Keller
 Susan Goldman Kim
 Jarratt David Lark
 Scott Alan Lile
 Gary Raymond McDonald
 Thomas George McLeod
 Jane Siegel McSharry +
 John Arthur Nash Jr. +
 Bryan Dewey Oslin
 Stephanie Otis Petersen +
 Mark Frederick Rich
 Ming Hsu Robinson *
 Sarah Ann Samaan
 John Glenn Schulte +
 Noel Credle Scidmore
 Sanford Collins Sharp *+
 John Kenneth Shaver
 Michele Renee Shaver
 A. Nicole Thran
 Janet Timmerman-Lark
 Cornelia Liu Trimble
 Michael Thomas Valley
 John Anderson Waites
 John Sloan Warner Jr. +
 John Herbert Wehner
 John Robert Werther *
 David Alden Wood +
 Claire Cheng Yang

1989

James Charles Anderson
 David Harris Bauer
 Jan Lewis Brandes *
 Kerstin Elizabeth Calia
 John Jeffrey Carr
 Karen Frances Carson
 Michael Lee Cheatham
 Susan Jane Cheatham
 Benjamin Souther Citrin +
 Robert Jeffrey Cole
 Thomas Edward Conturo
 Mark Allen Dosmann
 James George Drougas
 Scott Brian Dubit +
 Jennifer Lowe Ellis
 Randall Edward Ellis
 Roy Ellsworth Erb +
 John Patrick Furia
 Jonathan Ian Greenfield
 Elizabeth Ann Griffith +
 Richard James Harding
 Connor Joseph Haugh
 Gregory William Hendeby +
 Michael Sean Higgins +

VANDERBILT UNIVERSITY MEDICAL CENTER

Joel Collier Hutcheson
Richard Boles Johnston III
Alexis Hangin Kim
John Richard Lane +
John F. Laurenzo +
Gregory Paul LeMense
Steven Marc Lopatine
Edward Scudder Mackey Jr. +
Susan Eades Mackey +
Holly Campbell Mitchell
Michael Brent Moore
Mark Matheson Scheffer
Patricia Lee Schirmer +
Marcy Lynn Schwartz
Leslie A. Shinobu
Laura L. Shower
Jeffrey Mark Sippel
David Thomas Stern +
Dawn Suzette Sutherland +
Cooper L. Terry
Marc Richard Toglia
Anthony J. Vine
Donald Topping Weed
Peter Strautins Wilson
Stephen J. Yallourakis *+

1990

Christen Aristide Alevizatos
Jeffrey Raymond Balsev *
Louis McGavic Box
Donald Wayne Brady
Philip David Charles *
Mark Alton Cobb *+
Joseph James Creely III
Jonathan Dreifus *
Mark Allen Earnest +
Lauren Gayle Ficks +
Anne Venable Hansen
Tina Hartert *
Bruce Fredric Haupt +
Elizabeth Hartley Johnson +
Louis Collins Johnson III *+
Kimberly A. Klippenstein *
George Stanford Law
Mark James Maffett +
Mark R. McIlwain *+
David Scott Morgan
Clarice Decker Mugglin
Kirsten Nielsen
Anthony Andres Sanchez
Nicole L. Schlechter *+
Ransom Grady Snowden III
Lisa Testa-Dahlstedt +
Laura Rogers Towne
David Scott Turner
Benjamin W. Van Voorhees
Lisa Clare Verderber
Mary Laird Warner
Kimberly L. Wood +
Phillip Gregory Zentner +

1991

William Peter Adams Jr.
Peter James Armstrong
Deborah Lee Beyer
Michael Alan Burke

Roger William Coomer Jr. +
William Owen Cooper +
David Alan Deneka
Jeffrey Todd Denton
Frederick Thane DeWeese
Eric David Harding
Caroline Ruth Heise
Julie Lynn Kennon
J. Rebecca Liu
Robert Joseph Mangialardi
Jill Moses
Lee Anne O'Brien
Gregory James Perry +
Patrick Shawn Reynolds
Eric Charles Ringwalt +
John David Rosdeutscher +
David Michael Rose
Alan Fuhung Shikoh
Bennett Michael Spetalnick *+
David Jonathan Stallard Jr.
James Charles Wheeler
John Alan Zic *

1992

William Arthur Altemeier IV
Stacey Marie Anderson
David Gerard Boland
Linda Diane Brady
R. Bryan Chambliss
Sam Sungsoo Chang
Christian Paul Christensen
Lauren Brooke Gandhi
Sanjay Kumar Gandhi
Thomas Brent Graham
Marc Wilson Hungerford *
Vernon Sevier Hurst
Elizabeth Matilda Jones
Jessica Emma Klekamp
Lynn Noel Lameier
Serena Winglin Lau *
Juliet M. Liposky
George B. Lynch *+
Ahad Mahootchi +
Scott Alan Murkin *
Melinda Jane O'Leary
Holly Louise Olson
Allegra Patten
W. Edward Robinson *
Frank Hal Scott
Barton Eugene Smith
Mell Burress Welborn III

1993

Rasheed Irshad Ahmad
Angelina Gladys Ausban
Andrew Mark Barnstein +
Jeffrey F. Bleakley
Donna Jane Crowe
Anthony David Dake +
Robert Lester Dobbins
Carolyn Marie Fleming
Barbara Lynne Hipp +
David Randall Hudson +
Elizabeth Jackson Luce +
Paul Allen Luce +
Dawn Marie Macauley +

Eric Stratman Manske
Thomas Suddards McCall +
Andrew Gibbs Moore +
Steven Roland Norris
James Allen O'Leary
George Gaylord Robinson II
John Orland Schorge +
Christopher Paul Smeltzer
Robert Wesley Steele +
William Gordon Tanner
Jay Arthur Van Gerpen
Patrick Sewell Vidaver
Margaret B. Wright *+
Elizabeth Boettcher Yerkes

1994

Eric David Berger +
Todd D. Brandt
Gregory James Cannon
James Andrew Conrad
Tamara Manoji
Dassanayake
Devon L. Davis
Matthew F. Halsey +
Amy Winterbotham Hardman
Henry Lytle Harrell III
Scott Bradley Hearth
Kurt Karl Lark +
Rebecca Long Lark +
Daniel W. Lin +
Gregory Scott Martin +
Stephanie Sue Martin +
Scott A. Moore +
Wynne Ellen Morrison
Chetan Ravindra
Mukundan
Nicolette Myers +
Mark Alan Pilot +
Heather Marguerite Rietz
Amy Twiford Rose
Robert Louis Rosenfeld *
Steven D. Shotts
Jennifer Simpson-Manske
James Earle Sinex
Taja Anastasia Skalkos +
Thomas Anthony Tesaro
Harrison Frederick Warner
Sally Elizabeth Watson
Stephen Mark Watson
John Wesley Webb
Kimberly Ann White +
Michael Joseph
Yarborough

1995

Janet Kay Boyles
Judson M. Brandeis
Eric Colgrove
Daniel Crump
Laura Crump
Felipe Vinicio Espinoza
Daniel E. Esposito
Teresa Marie Esterle
John Thomas Fitch
R. Alan Goins
David Michael Greeson

John K. Joe
Wan Joon Kim
Melanie Lorinda Klein
Douglas Allen Lipperd
Siobhan Mara Mannion
Katherine Marshall Moore +
Anish Harikrishna Nayee
Sarah K. Parker
Christopher Mark Patton +
Christine Stoffel Sharis
Peter John Sharis
John Douglas Shields
Peter Edward Silas
Stephanie Diane Silas
Leslie Sue Stark
Colleen Fretz Swayze
Anna Butters Tanner
William David Thompson
Terri L. Vital
Mark Robert Winkle
Michael Zenni

1996

Jennifer Lynn Beachey
Craig Benoit
Gabrielle Levine Blackman
Paul F. Currier
David Paul Douglass
Deborah Anne Fisher
Michelle Aileen Ghert *
Kate Welsh Gregory
Amy Renee Guillet
Jeff B. Hales
Laura C. Hales
Katherine Stokes Hamilton
Dora Lynn Hughes
Robert Matthew Jotte
Jacqueline Yenlinh Le
Humphrey Lu
Linda Marie McAllister-Lucas
Lee Montgomery
Maura Kathleen O'Shea
Thao Hanh Pham
Brent Ponce
R. Richard Ramnath
S. Trent Rosenbloom
Bartosz Z. Rydzewski
Laura Love Sessums
Patrick R. Showalter
Jean T. Spence
Thomas R. Talbot III
Rene' George
VanDeVoorde III
Patrick Yeakey

1997

Gail Addestone
Joseph V. Agostini Jr.
Ann-Marie Elizabeth Amies
Stephen H. Bailey
Michael Lee Bobo
Karen Bonar
Susan Chang
Cliff Cho
Jo Ann Cook
Karen Cooper

John Cronin
Darren A. DeWalt
Cindy Downard
Michelle Bass Goldin
Mary J. Gootjes
Jed Gorden
David S. Gordon
Veronica L. Gunn
Jay S. Harms
Mary deRaimes Hinckley
Richard Ho
John L. Howard II
Kristina Ishihara
Elizabeth E. Kau
Alexy Kochowiec
Jennifer A. McCoy
Heidi Meinz
Elisabeth Fowlie Mock
Tom T. Nguyen
Sara Patterson
Susan J. Pearce
William J. Rutledge
Anne Sarbinowski
Brian Shay
Beth Small
Shane Smith
Marya Strand
Kathryn Teng
Michael C. Thigpen
Gurpreet K. Thind
Elizabeth C. Tyler-Kabara
Daniel Viner
Wrenn Wooten
Carolynn Young
Patrick Young

1998

Paul Biddinger
Tedric Dale Boyse
Andrew Trueman
Brockenbrough
Gregory Matthew Buxton
Traci Lynne Buxton
Christopher Scott Calhoun
Jason T. Call
Michael Scott Champney
Ankush Kumar Chhabra
Anderson Burton Collier III
Joel Samson Corvera
Patrick Cooksey Crowe
Timothy Alan Deering
Christopher Craig Dvorak
Robert John Esther
Ernest Blake Fagan
Evander Fletcher Fogle
A. Brent Fruin
Clark Harris Galbraith
Sarah Justine Gladstone
Richard Carl Gustafson Jr.
Christopher M. Hudson
Roxanne M. Jamshidi
Joan Neel Lee
Joseph Joe Naoum
Tamara Nix
Kristian Roy Olson
Sylvia Lucia Parra

VANDERBILT UNIVERSITY MEDICAL CENTER

- Daniel Ryan Penn
Esther Ann Penn
Kelly Rowden Richardson
Kara Lee Riedinger
Steven C. Robinson
Roanne Rachel Selinger
Omer Lee Shedd
Jonathan Cope Smith
Katherine Rebecca Stewart
Ryan W. Stewart
Aaron K. Styer
Dennis Clements Szurkus Jr.
Reena Roshan Talreja
Chandler Fleming Todd
Richard Morris Todd
Gale Timothy Tuper Jr.
Richard Tyson
Laura Louise White
Vaew Jon Wongsurawat
Aubrey Teresa Wright
- 1999**
Julie Bastarache
Brendan J. Collins
Mark Alan Cordes
Gregory Jacob Esper
Ronald Edward Glenn Jr.
Eric Lee Grogan
Ralph James Groves
Lance J. Klingler
Carolyn T. Oates
April Athena Truett
- * Indicates CRS Member
+ Indicates 5 consecutive year donor
D Indicates deceased donor
- House Officer alumni**
- 1938**
B. Smith Hopkins Jr. +
- 1939**
F. Tremaine Billings Jr. *+
Charles W. Sensenbach D
- 1940**
John C. Ransmeier
- 1941**
Joseph K. David Jr.
- 1944**
Leonard Joel Koenig +
- 1945**
William R. Nelson
- 1946**
Robert A. Goodwin Jr. +
Bruce A. Harris Jr.
Henry H. Tift +
- 1947**
C. W. Caulkins Jr. +
- 1948**
Robert H. Furman *+
- 1949**
William Carl Ebeling III
Andrew W. Townes Jr.
Ellis J. VanSlyck
John A. Yarborough *
- 1950**
H. R. Anderson
George A. Bishopric
John M. Hagen +
Owings W. Kincaid
John L. Sawyers *+
- 1951**
George B. Crafton
Ambrose M. Langa
G. Tom Proctor
- 1952**
Philip S. Norman
John G. Wells *+
- 1953**
Konrad Kircher *
Innes Armistead Nelson +
- 1954**
Joseph H. Allen Jr. *+
John M. Flexner *+
J. Kenneth Jacobs *+
James M. Phythyon
Lloyd H. Ramsey *+
Stephen Schillig Jr. *+
- 1955**
Dewey G. Nemeck +
Rodney D. Orth
- 1956**
Walter S. Cain
John P. Mims
Evangelos B. Polakis
- 1957**
Eric M. Chazen *+
Claude C. Cowan Jr. +
Coyle W. Williams Jr.
- 1958**
Jordan Joseph +
Catherine Coolidge
Lastavica *+
- 1959**
Samuel T. Haddock
James A. O'Neill Jr. *+
Robert H. Tosh Sr.
- 1960**
Joseph David Bybee
Asur Grisales *
- Abba J. Kastin +
Samuel R. Marney Jr. *+
Larry H. Parrott
- 1961**
Richard L. Doyle
Thomas R. Duncan *+
John L. Ferguson
Alan L. Graber
Gloria F. Graham +
Sidney Tolchin *
Leon P. Woods
Heun Y. Yune
- 1962**
Gordon K. Farley
James E. Hanchett
Jeanne M. Hanchett
Neil I. Kaminsky
William C. Lane
Richard P. Novick
William Schaffner II *
Glyndon B. Shaver Jr.
Timothy W. Stevens *+
William J. Stone *+
- 1963**
Garrett Adams
Clifford Allen Birge +
Winston P. Caine Jr.
A. Willard Emch Sr. *
J. Jeffrey McCullough
Richard D. Sweet
- 1964**
Reynalda Candelario
Oscar T. Feagin
Jay S. Goodman
James Thomas Trapp
- 1965**
Robert B. Cotton *+
Donald L. Gaines
Karl H. Hellinger +
Thomas B. Price
Alfredo L. Soyangco
William E. Woodward
A. Byron Young +
- 1966**
Collins Dale Brown +
William Tyree Finch *
John R. Graybill
Gustavo E. Hernandez
H. Bryan Noah
Rodney D. Skoglund
Jan van Eys *
James P. Wilson *+
Taylor M. Wray +
James A. Yount
- 1967**
George R. Avant *+
James T. Craig Jr.
M. Richard Cross
John D. Franklin *+
Joel D. Levinson
Calvin V. Morgan Jr. *
- Robert P. Myers
Adalberto Perez Rodriguez
Issam John Shaker
David S. Whittaker
- 1968**
Harry G. Adams
Isabella S. Collins *
Richard Levere Elliott
Robert R. Henderson
George D. Henning
John Allen McCutchan
Douglas Morris
Dennis H. Murphree
Hoon Park
James A. Parrott
Donald R. Pettit
John W. Templeton
Geeta P. Wasudev
Arthur W. Whitehurst
Thomas H. Whitley Jr.
- 1969**
William J. Bremner
Robert A. Buchanan Jr. +
Michael S. Clarke *
Mark A. Doyne
Joe Michael Edwards
Harold B. Kernodle Jr.
Thomas C. McNamara
Henry M. Middleton III
John P. O'Malley Jr. *
- 1970**
Reuben A. Bueno *+
Steven Jerry Culbert
Luiz F. DeMoura
David S. Jones
Frederick K. Kirchner Jr. *+
John A. Mihalevich Jr.
Michael A. Milek *+
Fred T. Owens
R. Kirby Primm
Harrison Johnston Shull Jr.
Paul R. Silk
Cesar Umezaki
James Singleton Ward
- 1971**
Ronald C. Allison
Richard A. Blath
Alan G. Cohen
Jackson D. Cothren
Davis M. Hahn
Andrew D. Kranik
Mona K. Mishu
Judith A. Operchal
Louis G. Payor *
John C. Rawl
Stots B. Reelee +
Frank J. Scarpa +
K. Byron Skubi *
Dixie E. Snider Jr.
David S. Stephens
Edward Hunter Welles III *+
Mario K. Yu +
- 1972**
George H. Barrows
Jeffrey H. Cohn
Woodruff J. English II
Clark R. Gregg +
Gerard L. Helinek
William N. Herbert
Ewin B. Jenkins +
Houston M. Kimbrough Jr.
Katherine A. Witherington +
- 1973**
Wesley L. Coker
Brian M. Davis +
Frederick L. Finke
John W. Greene +
Michael N. Linver
William R. Long *+
James E. Loyd +
Raymond L. Meneely
Robert C. Ripley *
Eric B. Scowden +
R. Bruce Shack *+
John L. Skudlarick
Edward H. Withers *
Leon F. Woodruff Jr.
- 1974**
Donald R. Barnett
Michael B. Bottomy *+
Glenn S. Bucksman *+
Robert F. Colyer Jr. +
Robert E. Finelli *+
Stephen S. Hawkins
John T. Matthews *
Richard E. Michalik
Robert B. Snyder
Annie B. Terry-English
John Paul Vansant
Victoria L. Vetter
Timothy C. Wirt *
Carl Wayne Zimmerman *
- 1975**
Duncan R. Campbell
Charles H. Clark III *
William Davis Kenner
Jane McDowell
David Moroney
Douglas K. Turnbull
Harold F. Vann +
John C. York II *+
- 1976**
Hoi Jine Bang
Jeffrey M. Barrett *+
J. Kim Bauriedel
Patrick G. Beatty
Mary E. Clinton
Francis H. Fischer
Judith J. Fischer
Robert E. Gentry
Guat-Siew Lee +
Bruce A. Lowe
Stuart Hall Manning
Michael E. Miller

VANDERBILT UNIVERSITY MEDICAL CENTER

E. Paul Nance Jr. *+
Barbara J. Olson
Lloyd Douglas Richardson
Nayantara S. Shah
Sushaila N. Tejani
Margaret Wood *+

1977

Jeanne F. Ballinger +
Rita Ann Biesen-Bradley *
Ann Racke Costello
Robert M. Donnell
Steven J. Eskind *+
Robert L. Estes +
William J. Fulkerson Jr.
Philip L. Kelton
Alice I. Lawver
Stephen S. Lexow
Robert L. Lownes
Paul R. McCombs III *
Ronald V. Miller
Jennifer L. Najjar
John Rush Pierce Jr.
Steve Snow
Richard W. Wintch
William G. Woolery +

1978

Mark R. Christofersen
Jerrold A. Clark
John E. Costello Jr.
Robert M. Evans
Phyllis J. Frostenson
James C. Gay *+
Clarke L. Henry Jr. *+
Robert Merrill Hunter *+
Robert W. Kieffer
Linza T. Killion
Kerry L. Kline
Michael Lichtenstein
F. Mark Lupinetti +
Andrew J. Padgug
Paul D. Parsons
Elizabeth Pierce *+
Rena M. Thomison +
David H. Wuellner

1979

Peter A. Accetta
Ben Alderdice
Robert E. Bechtold
Daniel C. Booker Jr.
Janet L. Dittus
Barney Scott Graham *
Bruce M. Kauder +
Barbara Moscicki
Richard A. Orland
W. Spencer Tilley Jr.
Thomas H. Wareing
Mary L. Watkins
Fred A. Weaver
Edward B. Weller

1980

John A. Barnard III *+

Preston W. Campbell III
Jeffrey B. Eskind *+
Roderic H. Fabian
Richard W. Garman Jr. *+
Steven Hadesman +
Thomas J. Halloin
M. Bruce Hirsch
Bonnie M. Miller *+
Mary M. Reams
Stephen M. Staggs
Jeffrey Sussman
Bryan Hadley Wilson
Karen S. Woncik *

1981

James P. Bolling
Roger A. Bonau
Lisa Thompson Craft
Rodney L. Dennis
Robert J. Dray +
William J. Dreyer
Randall M. Falk
Douglas S. Kernodle *+
Jonathan C. Nesbitt
Stephanie Mouton Reed *+
William A. Shell Jr.
Thomas C. Smith +
Anthony S. Wattleworth
Sally J. Winek +
Edward M. Zagula

1982

Graham A. Barden III
Joseph B. DeLozier III *+
Alfred L. George Jr.
Mary L. Henry +
Margaret S. Norris
Ronald J. Orrell
Jan Evans Patterson *+
James L. Peacock
Judith Jefferson Regan
William M. Regan
Mace L. Rothenberg *+
William H. Ryan III *
Leslie Susan Tim

1983

Jan S. DeLozier *+
Meredith A. Ezell *+
Richard J. Geer *+
James Leo Gildner
Charles H. Holloway
Ellen B. Hunter +
Stephen H. Landy
Dolleen Licciardi
Jason Drew Morrow
Thomas F. Patterson *+
Gary T. Podgorski
Claudia K. Preuschoff
Sherrie A. Richards +
Lenwood Perkins Smith Jr.
Simpson Bobo Tanner IV *
Jonathon D. Truwit

1984

Henry Wesley Baggett

Debra A. Benator
William C. Chapman *+
Raoul S. Concepcion *+
Mary Patrice Hancock
Harry Alex Jones +
Jeffrey A. Keenan
Michael D. Langford
Thomas C. Lewis
Walter H. Merrill *+
Larry E. Reaves *
Charles B. Ross +
Charles B. Rush *+
Margaret Rush *+
Edward L. Trimble
Albert L. Ungricht +

1985

Byron C. Abels Jr.
Calvin A. Bell +
Francis J. Block III +
Jay C. Butler
Mark Dudley Flora
Mary C. Gamache
Maria Garber
Gregory B. Lanford *+
MacRae Fort Linton *
Randolph A. Malone
Kenneth L. Parish
Yvonne F. Posey
John Gray Seiler III
David W. Smith
Marshall L. Summar
Noel Tulipan *+
Cynthia Turner-Graham
Samuel R. Watkins Jr.
David C. Wilson
David M. Zientek

1986

Alan Frank Bachrach *
Nancy J. Brown *+
Christopher P. Bunce
Kathryn E. Cramer
Stephen M. Dahlstedt +
Karen F. Davis
Thomas L. Davis
Michael E. Guerra
Larry R. Holder
James J. Link
John A. Mitchell
Donald F. Pierce Jr.
James E. Salter Jr.
Hrayr K. Shahinian
Mark D. Shepherd
Geoffrey Holt Smallwood

1987

Charles E. Bea
Jim C. Chow +
Karsten Gammeltoft
Cornelia R. Graves *
Robert L. Hash II
Jeanne M. James
David L. Jolgren +
Daniel Kevin McCammon
Mary S. McKee

Thomas P. Mills
Daniel F. Neuzil
Dolores C. Olivarez
Sharon M. Piper
David B. Richards
Timothy L. Sell
Kevin L. Waltz
Gregory J. Wilson

1988

Al S. Aly
William E. Blalock III
Laurence C. Carmichael
Thomas E. Ducker
Jeri E. Fitzpatrick
Nicola Antonio
Francelancia
Daniel L. Friedman
Sarah E. Hassell
Edsel P. Holden
Jane Kienle
Janice F. Lalikos
Ann Burgess Lettes
Murphy S. Martin
Yvonne W. Pawlowski
Stefan Tigges +
Robert T. Watts Jr.
Brett L. Wilson +

1989

Theresa Carducci-Whitehurst
Philip Karpos
Thomas J. Lewis Jr.
Robert Neidich
Paul Sabbatini
Scott Standard
Douglas W. Stokes
Tamara Wheeler
Thomas Wheeler

1990

Scott H. Allen
Yolanda Tai Becker
Eugene P. Chambers Jr.
Nicholas Gerard
Gardner Kenny
Hans-Peter Kiem
Amy L. Lynch *+
Debra R. Miller
Robert Moses
Ira Rosenshein
Mark Teague
John Tisdale
William Franklin Trent

1991

Carrie D. Alspaugh
J. Andrew Alspaugh II
Ray Alvarez
Virginia A. Eddy
Toby D. Goldsmith
Manju Kandula
Todd James Rosenbower
Matthew T. Speyer

1992

Steven J. Charous
Hal H. Crosswell III
Julia Terrell Gaines
Mark M. Kirkham
Bonnie S. Slovis *+
Audrey H. Tesauro
Stephen L. Tilley

1993

Christopher W. Deitch
G. Waldon Garriss III
Kurt B. Hodges
Ian D. Jones *
Sonia Alves Jotte
Wendy Jones Mangialardi
Vicki L. Miller
Rebecca J. Roberts

1994

Jeffrey Maxwell
Holzbeierlein
JoAnne E. Johnson-Turner
Michael J. MacDougall
Hyatt D. Sutton
Keith S. Thompson
Tad Yoneyama

1996


Kelly Shaffer Bennie
Kimberly Gnau Lomis
Eric Scott Palmer
Shali Ricker Scott
Timothy L. Van Natta

1997

John A. Watson

* Indicates CRS Member
+ Indicates 5 consecutive year donor
D Indicates deceased donor

Every effort was made to ensure the accuracy of this list. Please send any corrections or additions to the Annual Fund Office, CCC-5326 MCN, Nashville, TN, 37232.



Levi Watkins, M.D. '70, was the first surgeon to perform an implant of the automatic defibrillator, a procedure that has saved over 100,000 lives since 1980. He was also the first African-American to graduate from Vanderbilt Medical School. His medical education was made possible by a National Medical Fellowship.

“Every day that I am able to save a heart or liberate a mind, I am eternally grateful for the opportunities that enabled me to be where I am.”

Dr. Levi Watkins, surgeon, educator, human rights advocate

Today, more than ever, scholarship funding is needed so that worthy students can follow their dreams. “Places like Vanderbilt, in the number one tier, are competing for a finite number of America’s college graduates because costs have risen, and resources have not caught up with the cost,” Watkins said.

Over 80 percent of Vanderbilt medical students require financial aid, yet Vanderbilt is able to provide less than half of their needs. Both diversity and equal opportunity are high priorities of Vanderbilt Medical Schoolgoals that can only be achieved with adequate financial resources.

Alumni gifts to scholarships not only help today’s students but continue to strengthen your alma mater. You can make a gift to the Annual Fund, or if you would like to make a larger impact, planned giving may be an attractive option. A gift of long-term appreciated property such as stock or real estate can provide significant tax benefits. If your gift supports a trust or gift annuity, you may also benefit from a life income.

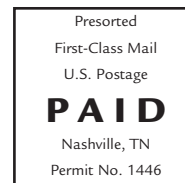
To find out more about estate planning and charitable gifts, contact:

Linda Garceau-Luis
Office of Planned Giving
301 Medical Center South
Nashville, Tennessee 37232-2140
615/936-0241 or 800/288-0028
linda.garceau-luis@mcm.vanderbilt.edu

Vanderbilt Medicine

D 8200 Vanderbilt University Medical Center North
Nashville, TN 37232

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David D. Thombs, M.D., '63

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Pacific Palisades, CA
Gary E. Penner, M.D., '72
Longview, WA
Henry Geoffrey Watson, M.D., '82
Oakland, CA

Mid West Area

Alan H. Fruin, M.D., '67
Omaha, NE
Richard B. Johnston, Jr., M.D., '61
Silverthorne, CO
Courtney Shands, III, M.D., '82
Kirkwood, MO
Sara J. Shumway, M.D., '79
Minneapolis, MN

Northeast Area

Joseph A. Cook, M.D., '64
Hastings-on-Hudson, NY
Emily Merle Haller, M.D., '50
Glencoe, MD

Southeast Area

Owen Beverly Evans Jr., M.D. '73
Jackson, MS
Mark Ray McIlwain, M.D., D.M.D., '90
Muscle Shoals, AL
William R. Welborn, Jr., M.D. '67
Sheffield, AL

Tennessee (Except Davidson County)

Jack T. Hopkins, Jr., M.D. '74
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