Body and Soul
Moxi, a Paws With A Cause assistance dog, awaits her turn for attention in the University Hospital courtyard on October 19. Moxi, her trainer Becky Oslund, and other Paws With A Cause representatives visited campus as part of Investing in Ability Week, sponsored by the U-M Council for Disability Concerns, which aims to increase awareness of important disability issues.

Photo: Marie Frost
The practice of medicine, despite dramatic changes in diagnostic and therapeutic options, still depends on communication, critical thinking, and diagnostic and therapeutic acumen. We focus much of our educational efforts on these enduring aspects of medicine. However, we are always striving for better ways to help our students learn. In this issue, we delve further into the expanding influence of technology on medical education in the early 21st century, and we raise the question: Are we creating a new kind of medical school? I believe there also is a related question: Can we afford not to?

As U-M President Mary Sue Coleman recently stated upon her reappointment to a second term, universities exist to pave the way to tomorrow. We as a medical school must think in new and creative ways about what we do and how we do it, availing ourselves of new tools and methods that further our goals.

Technology today provides access to seemingly limitless clinical and research information through biomedical databases and digitized library holdings. The Internet allows transmission of information and communication from anywhere in the world. Virtual patients present dramatic new views of anatomy and the opportunity for repeated practice of procedures and techniques that can accommodate individual learning styles, paces and needs. Furthermore, we can assess how students are learning, gathering information and coming to clinical conclusions, which is what we are training them to do. We seek to prepare the foundation for our students so they will be equipped to adapt to change and continue to learn throughout their careers.

It is a different kind of medical school we have today, one we must pursue to “pave the way” to tomorrow’s medicine, utilizing the most promising advances and methods to educate and train our students so they will continue to be leaders and best.

Sincerely,

James O. Woolliscroft, M.D. (Residency 1980)
Dean, U-M Medical School
STUDENTS STRIVE TO NARROW GAP IN ACCESS TO CLINICAL LITERATURE

The quick and easy access to medical literature in the U.S. — in the form of comprehensive clinical databases, and a wealth of textbooks and journals — isn’t common to all countries, particularly those in the Third World. A newly formed group of undergraduate students from the Health Sciences Scholars Program (featured in the summer 2003 issue of Medicine at Michigan), spearheaded by sophomores Konrad Sawicki and Mario Romero, aims to do something about that.

The mission of the Medical Journal Outreach Initiative (MJOI) is to disseminate clinical literature, in the form of medical journals, to medical schools and health systems around the world. The MJOI seeks donated medical journals (maximum of two years old) from physicians and researchers to distribute to health systems where lack of clinical literature is an obstacle to improved health care — including sites in Kenya and Ethiopia.

The MJOI seeks a diverse collection of well-known journals from both general medicine and various specialties (e.g., New England Journal of Medicine, JAMA, Annals of Internal Medicine). To donate journals, send them to:

Medical Journal Outreach Initiative
c/o Family Medicine
L2003 Women’s, SPC 0239
1500 E. Medical Center Drive
Ann Arbor, MI 48109-0239

Contact Sawicki at ksawicki@umich.edu with questions or to request mailing labels. The group’s first shipments of medical literature will begin later this winter and will continue on a regular basis throughout the academic year.
COVER STORY:

14 Faith in the Power of the Pulpit
What can churches do to help provide health care and information to those most in need, most at risk — and least likely to trust the health care establishment? The Health System and area African-American churches are proving to be productive partners. By Kimberlee Roth

20 Secrets of the Cilia
They exist on nearly every cell of virtually every organism on Earth, yet cilia have been regarded as vestigial remnants of distant times until just a decade ago. Scientists are now learning how fundamental and vital cilia are to life itself — and how defects in them can cause the body to go terribly wrong. By Sally Pobojeuski

26 Change Agent
The tech revolution is bringing about the greatest transformation in the study of medicine in a century, creating for students not only flexibility and convenience in today’s fast-paced way of life, but also the opportunity to learn at their own pace. Is it creating a new kind of medical school? By James Tobin

Medicine at Michigan Mailings
A few of our readers have been receiving multiple copies of Medicine at Michigan. Please accept our apologies. Our mailing list is pulled from a variety of sources, and while we try to eliminate duplications, we ask that you offer any extra copies to those who may share your interest in medical research, education and patient care at the University of Michigan Health System.
Waxing Nostalgic

After high school, I attended the University of Nebraska, majoring in chemical engineering, and went on to Ohio State (yes) where my major was pre-med. Then I attended Michigan’s Medical School from 1945-49. So I do have other allegiances, but none as strong and enduring as Michigan.

It seems Michigan has been with me for eons and the associations have been strong and sometimes unlikely. During World War II, most professions had members in the military. In the early 1940s, I found myself stationed in an Army Hospital on the outskirts of Chicago, named Vaughan General Hospital. It wasn’t until the beginning of my second year in medical school that I realized that name came from a former dean of the school, Victor Vaughan. While studying medicine in Ann Arbor, I belonged to the Victor Vaughan Medical Historical Society. In 1950, like others in various professions now in the Army Medical Corps, I was stationed in the Tokyo General Dispensary. It was there that I was reminded that the dean of the U-M Medical School, Dr. Albert Furstenberg, had been sent to evaluate and share his input on medical facilities in Tokyo. As chief of the outpatient facility in Tokyo, I was aware of Dr. Furstenberg’s input when I learned the pharmacy there dispensed a certain ear drop, one of Dr. Furstenberg’s concoctions known as BBA (bichloride of mercuryboric acid and alcohol). I prescribed it while in Tokyo, but have never found it anywhere else.

I also kept in close touch with anatomy professor Russell T. Woodburne. In gross anatomy lab our first year, we named our cadaver “Ernie” so that we could say we were working in Dead Earnest, which amused Dr. Woodburne. He needed work done around his home, so I spent most weekends mowing his backyard lawn and doing chores around his place, earning enough money to buy corsages for dances.

At one point in 1950 during the Korean War, I found myself pinned down with another soldier by enemy fire. Unable to expose our position or begin retaliatory action, we found ourselves asking “Where are you from? What did you do there?” He too, it turns out, was a Wolverine. Can you imagine? Old Home Week on a battlefield!

My best to all at Michigan. Please keep up the good work. When I’m on campus and things look unfamiliar to me, I remember that in my days there was nothing but woods and later a VA hospital north of the Huron River. And oh, yes, Pretzel Bell was up and running — I mean frothing — then.

If there’s any lesson to be learned from this recitation, it must be: Never encourage a proud alum to wax nostalgic!

H.J. Galloway (M.D. 1949)
Silver Spring, Maryland

Editor’s Note: To the contrary: we love when our alumni reminisce and never tire of hearing stories such as Dr. Galloway has shared.

An Enjoyable Read

Your recent “Moments” piece about Shelley Batts (summer 2007) was a joy to read — great selection, focused and succinct. Whitley Hill has a gift for converting the interview into an enjoyable read.

Steven Newman (M.D. 1970)
Bloomfield Hills, Michigan
A Bridge to Lung Transplantation
Gaining patients precious time is only one advantage

In the summer 2003 issue of Medicine at Michigan, in our cover story “Bioengineering Human Health,” we reported on research being done by Robert Bartlett (M.D. 1963) and his colleagues to develop a prototype of an implantable artificial lung then being tested in sheep. Recently, Bartlett’s lab received a $5 million grant from the National Institutes of Health to prepare the lung for clinical trial. The following update provides details on the progress and status of this exciting — and future life-saving — technology which is moving ever-closer to human application.

“A lot of research has been involved with studying the physiology of the heart,” Robert Bartlett says, “and then designing a lung device that uses the heart rather than a mechanical pump — that’s what we’ve accomplished in the last five years. Now we need to refine the device into final form.” Bartlett, a professor emeritus of surgery, is a pioneer in the development of artificial organs. His laboratory, which has been developing an artificial lung for the last 12 years, has had continuous funding from the NIH since 1971 for the development of artificial organs.

The implantable artificial lung also will permit conditioning of the patient.

“People with end-stage lung diseases are often debilitated, and this adds to the difficulty of transplantation and recovery. We know they will do better when they finally get the transplant if they can get into good physical shape before the operation,” Bartlett says. “An implantable artificial lung would permit a patient to be fairly mobile and to live at home, rather than remaining bedridden in an ICU waiting for surgery, as is often the case.”

Another advantage of the implantable lung is that the device can be left in place following transplantation until the transplanted lungs are fully functioning. This will permit accepting lungs for transplantation that would otherwise be declined.

The NIH grant funds research in collaboration with James Grotberg, Ph.D., and Joseph Bull, Ph.D., in the Department of Bioengineering at the U-M College of Engineering. The grant doesn’t cover clinical trials, but will fund all steps necessary to make sure it functions under the same varying conditions as the lungs it will replace.

The U-M team collaborates with the four other laboratories in the world working on implantable lungs — the universities of Maryland, Kentucky, Pittsburgh and Osaka (Japan).

Keith Cook, Ph.D., a U-M research investigator and cardiac physiology expert, is the main bioengineer in this, the final phase of the project. Because the prototype relies on the patient’s own heart to pump blood through the device, Cook’s understanding of how the right ventricle, which does the pumping, works, fails, handles stress — and how the device will perform according to these variables — is vital to the project’s success.

Bartlett’s team also includes three Health System physicians: Jonathan Haft (Residency 2001, Fellowship 2005), an adult cardiac surgeon, Ronald Hirschl (M.D. 1983, Residencies 1989 and 1991), a pediatric surgeon, and Andrew Chang, M.D., surgical director of lung transplants. The first clinical trial will be conducted with adult patients.

“Because these devices are prototypes, we make them one at a time. An important part of our research from this point forward is to have a device that satisfies the FDA and can be reproduced commercially so that it can be made exactly the same every time,” explains Bartlett.

There also are some physiology experiments remaining, Bartlett says. In previous testing, the device had fairly constant blood flow, and researchers need to understand the effect of variable blood flow. When blood flow is lower, clotting can become a factor and the correct use of anticoagulants needs to be defined. When blood flow is higher, the heart has to work harder to pump blood through the device. Exercise requires high blood flow, placing corresponding demands on the device to provide oxygen. In both cases, small changes to the prototype device will be necessary to make sure it functions under the same varying conditions as the lungs it will replace.

Editor’s note: The device developed by U-M physicians and engineers still needs further testing in animals before any clinical trial involving human participants can take place. At this time, the team is not establishing a list of patients to be considered for the first clinical trial.
Medicine as Art

Jane Lee is a first-year medical student originally from Steilacoom, Washington, and a violinist with the Life Sciences Orchestra. The orchestra consists of members of the life sciences community from across the University of Michigan, and is part of the Health System’s Gifts of Art program.

“I started playing when I was 5 years old. Initially, it took a lot of practice and repetition — and squeaking. Being a violinist has taught me the value of years of training and practice — the attention to detail and all the time it takes to produce a finished product, master a skill. Once the foundation is set, you develop your own style and expression. It’s the same with medicine. That’s why I like the depiction of medicine as an art.

“The Life Sciences Orchestra was a huge draw for me. At the audition, I asked one of the organizers if he taught in the School of Music and learned he’s actually a professor of dermatology. It gave me some perspective — that I can continue playing music throughout my medical career.

“I saw one of my professors after our last rehearsal. It’s great to be able to talk to her about medicine, but also to be playing music alongside her without being in a hierarchy.”

—Jane Lee

Interview by Whitley Hill
Photograph by J. Adrian Wylie
From the outside, the brain looks like a gray lump of tissue, covered with ridges and bumps. But inside, a complex network of thread-like white fibers carries signals back and forth between areas of the brain and the spinal cord. Each fiber is crucial to a particular aspect of how the mind communicates with the body.

Until recently, neurosurgeons couldn’t see these fibers — called white-matter tracts. Invisible to the naked eye and impossible to see on normal brain scans, they are easily damaged during brain operations to remove tumors or treat severe epilepsy. The result can be permanent damage to the senses, movement or cognitive ability.

“In the past, we’ve never been able to see the direct connections from one part of the brain to another, or from one part of the brain to the spinal cord,” says Suresh Mukherji, M.D., who directs the Division of Neuroradiology. “Now we can see those connections by looking at the sub-cellular level to see how water molecules move in brain tissue.” Mukherji is a professor of radiology, of otolaryngology and of radiation oncology.

The Health System is one of the first medical centers to offer image-guided surgery using a new white-matter imaging technique called tractography. Brain-imaging specialists like Mukherji work closely with U-M neurosurgeons, who perform thousands of brain and spine operations each year, and with neurologists who diagnose and treat brain and nerve disorders.

Oren Sagher, M.D., an associate professor of neurosurgery and of anesthesiology, says this teamwork makes it possible for him to operate with the best possible information about each patient’s brain. “Thoroughly imaging the brain is one of the keys to successful brain surgery,” Sagher says. “We have to be able to see all the structures we’re going after and all the structures in our way that need to be avoided.”

Mukherji, Sagher and their colleagues predict that tractography will change brain surgery and the way we see the brain’s function.

Tractography uses powerful magnetic resonance imaging (MRI) scanners that create images of the patient’s brain one thin slice at a time. Then, ultra-fast computers equipped with special software compile all the slices into a three-dimensional image of the brain. Lastly, the neuroimaging team uses special techniques to see how water molecules are oriented and move inside every area of the virtual 3-D brain. The end result is a series of spectacular images that show the entire network of white-matter tracts with their individual nerve fibers.
These images become a roadmap for surgeons like Sagher, especially when they’re superimposed on other images that show the specific areas of “gray matter” where epileptic seizures begin or where tumors lurk.

This cross-registration fuses information about two areas of the brain: areas the surgeon needs to remove or destroy to treat the patient’s condition and areas the surgeon needs to avoid to preserve a patient’s vision, for instance, or her ability to move her right arm.

Mukherji, Sagher and their colleagues predict that tractography will change brain surgery and the way we see the brain’s function forever, just like the first CT and MRI scans changed the diagnosis and treatment of many brain disorders. The team is pursuing research to improve the technique and show how it can best be used — and how it helps spare patients from unintended consequences.

“Instead of imaging the brain, we’re essentially imaging the mind,” says Mukherji. “We’re able to image how a person’s thoughts and brain impulses travel, and this is just the beginning.”

—Kara Gavin

For an expanded version of the story: www.med.umich.edu/opm/newspage/2007/hmepilepsy.htm

NIH Awards U-M $55 Million for Translational Research Initiative

The University of Michigan has received a $55-million Clinical and Translational Science Award (CTSA) from the National Institutes of Health to support a new University-wide initiative in interdisciplinary research aimed at improving human health.

Translational research takes promising discoveries from the laboratory and moves them to the clinic where they can be tested for use in patients. It’s the often-missing link between traditional biomedical research and medicine.

The five-year grant is the third-largest NIH award in the University’s history. Competition for CTSA grants is intense. With this award, the U-M becomes part of the national CTSA consortium made up of 24 leading academic medical centers in the United States. When fully implemented in 2012, the consortium will include about 60 institutions.

The Michigan Institute for Clinical and Health Research — directed by Daniel Clauw (M.D. 1985), professor of internal medicine — is the administrative umbrella for the grant. Many U-M schools, colleges, institutes and divisions are participating in CTSA-driven initiatives through the institute.

“A Clinical and Translational Science Award is the superhighway of the NIH roadmap — it’s the ultimate resource an institution needs to deliver cures and treatments to our patients,” Clauw says. “The U-M has been building infrastructure for nearly five years. We are ready to use the award to help people do their best research, as well as to attract people who weren’t previously thinking about a career in clinical or translational research.”

The initiative grew out of an NIH commitment to re-engineer the nation’s clinical research enterprise, one of the key objectives of the NIH Roadmap for Medical Research.

—Sally Pobojewski and Mary Beth Reilly

For an expanded version of the story: www.med.umich.edu/opm/newspage/2007/ctsa.htm

Hospitals Make U.S. News

In 2007, for the 12th consecutive year, the U-M Hospitals and Health Centers were included in the U.S. News & World Report honor roll of “America’s Best Hospitals.” The U-M was named 14th among the top 18 hospitals in the country, and fourth among hospitals affiliated with public universities.

In addition, C.S. Mott Children’s Hospital was named one of the top 30 pediatric hospitals in the nation in U.S. News & World Report’s first edition of “America’s Best Children’s Hospitals.” Ranked 22nd, it was the only children’s hospital in Michigan to make the list.
Predicting Risk in Aortic Dissection

Each year, 10,000 Americans suffer a sudden and often lethal tear in the lining of the body’s largest blood vessel, the aorta, which carries blood from the heart to the lower half of the body.

Patients today are far more likely to survive this medical crisis, called aortic dissection, thanks to improved medical imaging and treatment. But after they leave the hospital, they face a one-in-four chance of dying within the next few years. Doctors don’t have a reliable way of predicting which patients have the highest risk of death and who might benefit most from surgery or additional treatment.

In a New England Journal of Medicine study directed by physicians in the Cardiovascular Center, researchers propose a new way to predict post-hospital death risk for aortic dissection survivors, and present a new model for the mechanism behind that risk.

The model focuses on the presence of blood clots in a channel created when the layers of the aorta separate like two layers of an onion. This channel, called the “false lumen,” runs alongside the “true” lumen — the hollow middle of the aorta, which is the pipeline for blood flowing out of the heart and down through the abdomen.

As blood enters the false lumen from the top of the torn aorta, it gets trapped inside the new channel where blood clots can form. The study showed that the risk of post-hospital death was more than two-and-a-half times greater for patients with partial clotting of the false lumen, than for those whose false lumen contained no clots. If the false lumen was completely filled with clotted blood — something that happens infrequently — the patient had an intermediate risk of death.

“This could be a predictor of patients most at risk — knowledge that might help guide decisions about when it’s wise to proceed with more aggressive treatment and when we can hold off,” says lead author Thomas Tsai (M.D. 1998), a fellow in cardiovascular medicine.

The study involved data from 201 patients with dissections in their descending aortas, who were followed for up to three years or until death, as part of IRAD — the International Registry of Acute Aortic Dissection. IRAD is headquartered at the Cardiovascular Center and includes data from 22 large medical centers in 11 countries. Kim Eagle, M.D., a director of the Cardiovascular Center, also helps direct IRAD.

—Kara Gavin

For an expanded version of the story: www.med.umich.edu/opm/newspage/2007.aorta.htm
For patient information on aortic dissection: www.med.umich.edu/1libr/aha/aha_aortdiss_car.htm

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Music for Deaf Ears

Scientists at the Kresge Hearing Research Institute have shown in animals that a tiny, ultra-thin electrode array implanted directly in the auditory nerve can transmit a wide range of sounds to the brain. U-M scientists believe the new hearing-assist technology could one day be a superior alternative to current cochlear implants.

Electrode array implants could improve the ability of profoundly and severely deaf people to hear low-pitched sounds common in speech, hear conversation in a noisy room, identify high and low voices, and appreciate music — areas where current cochlear implants have significant limitations, says John C. Middlebrooks, Ph.D., a professor of otolaryngology and of biomedical engineering.

Middlebrooks explains that cochlear implants are designed to stimulate the auditory nerve and other cells to produce a sensation of hearing. But their location, separated from auditory nerve fibers by fluid and a bony wall, is a limitation.

"Access to specific nerve fibers is blunted," Middlebrooks says. "The effect is rather like talking to someone through a closed door. Because the electrode array is in intimate contact with nerve fibers, it achieves more precise activation."

The next step will be testing the device over time to see if it is safely tolerated by the auditory nerve, according to Middlebrooks. If the initial success in animals is borne out in further tests, he says that a human auditory nerve implant is probably five to 10 years away.

—Anne Rueter

For an expanded version of the story:

Fish Oil Beats Vegetable When It Comes to Inflammation

Consuming more fish oil and less vegetable oil could help reduce inflammation by decreasing the body’s production of chemicals called prostanoids, according to William L. Smith (Ph.D. 1971), professor and chair of biological chemistry.

In recent research, Smith found that prostanoids made from vegetable oil caused more pain, swelling and redness in body tissues, while prostanoids made from fish oil led to fewer inflammatory symptoms.

Both fish oils and vegetable oils are converted into prostanoids through chemical reactions involving enzymes called COX-1 and COX-2. Increased understanding of how these enzymes regulate prostanoid production could lead to more effective anti-inflammatory drugs with fewer side effects.

For an expanded version of the story:
www.newswise.com/p/articles/view/531827

Photo: ©iStockphoto.com/MuratKoc
Cutting cholesterol-lowering pills in half could slice a hefty amount off of America’s prescription drug costs without interfering with cholesterol control, according to a study led by U-M pharmacist Hae Mi Choe.

Many medicines are manufactured in tablet formulations that contain different doses of the active ingredient, but the wholesale cost of half of a high-dose pill usually is much lower than the cost of a whole low-dose pill. While only some types of pills can be split effectively, the practice could be used by millions of Americans — including many who take popular cholesterol-lowering drugs called statins.

The findings have already had an impact on the prescription drug plan for U-M employees and retirees. In just the first year, a new pill-splitting program saved the University $195,000, and saved individuals more than $25,000 in co-pays.

—Kara Gavin

For an expanded version of the story: www.med.umich.edu/opm/newspage/2007/split.htm

Strain of “Pale Tremor” Mice Leads to Gene Discovery

Thanks to the chance appearance of a strain of mutant mice in their research laboratory, U-M scientists have identified the gene responsible for one type of Charcot-Marie-Tooth disorder, common among inherited neurological diseases.

The discovery means a genetic test will be possible for people with a less common subtype of the disorder — one that until now was unidentified and had an unknown genetic basis, says Miriam Meisler, Ph.D., a professor of human genetics in the Medical School.

It all started when scientists in Meisler’s lab noticed that some mice had offspring with a strange, wobbly gait and light coat color. The team named them “pale tremor” mice. Clement Chow, a Ph.D. student in human genetics, identified a gene mutation called FIG4 that was responsible for the animals’ symptoms.

Researchers then tested 95 patients with Charcot-Marie-Tooth disorder of unknown cause. In four patients, they found mutations in FIG4, the same gene implicated in the diseased mice. The finding has resulted in a newly identified form of the disease called CMT4J.

Charcot-Marie-Tooth disorder affects one in 2,500 people in the United States. The disease damages peripheral nerves in the feet and legs, causing pain and muscle weakness, foot deformities, and difficulty walking.

—Anne Rueter

For an expanded version of the story: www.med.umich.edu/opm/newspage/2007/charcot.htm

For patient information on Charcot-Marie-Tooth: www.ninds.nih.gov/disorders/charcot_marie_tooth

A pale tremor mouse (right) with a normal mouse in Meisler’s lab.

Large fluid-filled vacuoles pack cells of mice with the FIG4 gene mutation, shown at right, and interfere with cell function. A normal cell is shown at left.

For an expanded version of the story: www.med.umich.edu/opm/newspage/2007/charcot.htm

For patient information on Charcot-Marie-Tooth: www.ninds.nih.gov/disorders/charcot_marie_tooth

A pale tremor mouse (right) with a normal mouse in Meisler’s lab.

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For patient information on Charcot-Marie-Tooth: www.ninds.nih.gov/disorders/charcot_marie_tooth
Doctor’s Orders

Nurses in the Health System’s Neonatal Intensive Care Unit (NICU) used to spend a lot of time “hunting and gathering,” says Kathryn Schmidt, who used to work as a clinical nurse in the unit. Tracking down patient charts and processing hand-written, and sometimes illegible, physician orders was a regular part of a nurse’s day. But that was before UM-CareLink.

UM-CareLink is a new computerized provider order entry system designed to improve the quality and safety of inpatient care in the Health System. Implementation of the new system began in 2006, and it is now up and running in ob/gyn, Women’s Hospital and Mott Children’s Hospital.

The system allows physicians to order tests, procedures and medications online from any computer, eliminating the need for paper forms. Nurses can access test results and enter information on a laptop computer next to each patient’s bedside. “Everybody has access to the same information at the same time from anywhere,” Schmidt says. “There’s no more searching for charts and no more tracking down physicians to double-check their handwriting. Electronic orders go directly to the pharmacy or the lab, so the turn-around time is much quicker.”

One year before the transition to UM-CareLink, Schmidt was asked to serve as the liaison between the NICU nursing staff and the Orders Management Project design team. “It was a big change,” Schmidt says. “Some of our nurses had used the old paper system for 30 years. Just getting comfortable with the computer was a big learning curve. But in the end, our nursing staff agreed they would never go back to paper.”

UM-CareLink is scheduled to “go live” in University Hospital and the Cardiovascular Center in April 2008.

—Sally Pobojewski

Independence Threatened by Missed Conditions

About half of adults age 65 and older have health conditions that affect their ability to participate independently in daily living activities, such as bathing or dressing, according to a recent U-M study. These conditions are often overlooked by physicians.

Researchers found that 50 percent of the 11,000 older adults studied had a moderate to severe form of at least one of the following conditions: cognitive impairment, falls, incontinence, low body mass index, dizziness, vision impairment or hearing impairment.

The study was the first to investigate the total impact of geriatric conditions on health and disability in the older adult population, notes Christine Cigolle, M.D., a lecturer in family medicine and a physician in the V.A. Ann Arbor Healthcare System.

“Because the focus in medicine has been on diagnosing and treating diseases, these geriatric conditions can be missed by physicians,” says Cigolle. “Clinicians need to ask older patients about these issues. In many situations, they may be able to help manage the condition before it leads to disability.”

—Katie Vloet

For an expanded version of the story: www.med.umich.edu/opm/newspage/2007/geriatric.htm
Faith in the Power of the Pulpit

Health System staff and faculty ally with African-American church leaders to reach out, build patient trust and improve community health

BY KIMBERLEE ROTH • PHOTOS BY MARIE FROST

Not far from the brightly-colored stained-glass, clerestory windows and lavender-cushioned pews of a church sanctuary in Ypsilanti, Michigan, comes music. Rich, resonant music that moves listeners to their feet, connecting them with the past.

But it’s Wednesday not Sunday, the pews are empty, and the melodies aren’t exactly devotional. Instead, the brassy sounds of big band jazz fill the church. And those moving to the beat — on their feet and from their chairs — have not come to pray. Rather they’re here to socialize, to reminisce and even ... to make salsa.

Twice a week, a small social hall at Brown Chapel African Methodist Episcopal (AME) Church, under the leadership of Pastor Jerry Hatter, about a 20-minute drive from the University of Michigan Health System, serves as the home base for Silver Club, a day program for people in the early and middle stages of memory loss.

Silver Club meets in Ann Arbor the other days of the week and is run in both locations by the U-M Geriatrics Center, working closely with area church leaders. Brown Chapel was involved in the inception of Silver Club, even before the group started meeting there, and was committed to transportation efforts early on. Members of the church volunteer their time to provide daily van service to clients and help out with the rest of the daily activities. Nearly all the clients, currently between 52 and 94 years old, live with their adult children. For many, the van service is what makes it possible to participate in the day program — and to continue living with family. “The church has made a serious commitment to us, and we to them,” says Beth Spencer, a hospital social worker who directs Silver Club activities.

Silver Club is just one of the cooperative efforts between the faculty and staff of the Health System and leaders and members of area African-American churches. These partnerships share a central mission: to reach underserved African-Americans in order to improve health and well-being as well as to reduce striking health disparities that put blacks at higher risk of dying from many common — but preventable and treatable — diseases.

The Brown Chapel-Geriatrics Center relationship began more than a decade ago, when a doctoral student was working with Ypsilanti-area African-American churches to understand and address health-related needs of seniors. Elder care emerged as an issue, including family support for Alzheimer’s disease and dementia. Silver Club has been running since 1998 and began meeting at Brown Chapel in 2000.

Partnersing with the church has “allowed us to reach out, in ways we couldn’t have otherwise, to older adults with memory loss in the African-American community, and in Ypsilanti and Ypsilanti Township, who were not being reached by other services like this,” Spencer says. Families participating in Silver Club pay according to a sliding scale. The program receives support from the Health System but must raise its own operating funds to provide services to the 18 daily participants.

left: Silver Club member Buford St. Clair and his wife, Earline, who volunteers with the club

opposite: Pastor Jerry Hatter during a Sunday service at Brown Chapel
of the Pulpit
Beyond spiritual health

“Black churches have always been more prone to take faith and move it to practical application,” says A. Oveta Fuller, Ph.D., an associate professor of microbiology and immunology in the Medical School. Fuller also serves as science advisor to the global AME Church and as pastor at Bethel AME Church in Adrian, Michigan. The AME Church grew out of a social justice movement in Philadelphia in the 1700s, she explains, where blacks often could not worship at the altars of churches attended by whites. When a yellow fever epidemic hit the city in 1793, AME members and pastors helped care for the sick. AME members like Rosa Parks were prominent in the Civil Rights and other social justice movements.

“Historically, religious organizations have had a major influence with people in the African-American community,” says Fuller. Members may view health efforts in partnership with black churches as more credible — important in light of such past abuses as the Tuskegee Syphilis Study and more subtle but pervasive forms of inequities that result in major health disparities today.

Although a self-described “person of faith,” Fuller never intended to be a minister; her career goals centered on scientific research. But her father’s death in 1990 caused her to reflect on the relationship between faith and science. She came to realize that for her the two weren’t mutually exclusive; that, in fact, quite the opposite was true. She also came to realize that her relationship with the church could have a direct impact on the health and well-being of others.

As a virologist and an African-American woman, Fuller had written about and was well aware of the disproportionate rates of HIV infection among people of African descent. African-Americans comprise about 13 percent of the U.S. population, but account for nearly half of HIV/AIDS diagnoses. Black teens account for almost three-fourths of new AIDS cases among U.S. teenagers, according to figures from the U.S. Centers for Disease Control and Prevention. In sub-Saharan Africa, more than 25 million people are infected — and millions of others affected — by HIV/AIDS.

And she knows how the virus works. Fuller’s research focuses on the molecular mechanisms by which viruses enter cell membranes, reproduce and spread. She teaches medical, dental and graduate students about pathogenic viruses, including herpes simplex and HIV. “What became clear to me is that what scientists already know about HIV could make a huge difference if it is successfully conveyed to the people most affected.”

These partnerships share a central mission: to reach underserved African-Americans in order to improve health and well-being as well as to reduce striking health disparities that put blacks at higher risk of dying from many common — but preventable and treatable — diseases.
"A whole different mindset"

Sunday mornings at Brown Chapel, it’s not unusual for Hatter to espouse from the pulpit, right along with passages from scripture, the virtues of drinking enough water or the benefits of eating whole foods and buying organic. That’s because the church participates in a national wellness program for black churches, called Body & Soul. The U-M Comprehensive Cancer Center, the Program for Multicultural Health and the American Cancer Society’s local office all provide support for Body & Soul to eight Ann Arbor and Ypsilanti churches.

The program promotes eating more fruits and vegetables and living a healthy lifestyle, and it has been part of Brown Chapel’s Health and Wholeness ministry for two years. Hatter says it has sparked some changes among members of his congregation. He now hears church members “talking more of eating the right things and decreasing fast foods. We basically keep and hold each other accountable for the things we see.”

When one of those things happens to be a bag from a fast-food restaurant, he adds, it’s not unusual to hear good-natured ribbing, such as  

**Oh my God, what are you doing?**

or  

**What’s up with that?**

“That accountability makes a big difference,” he says. Many more formal discussions take place too, such as talks about portion size or cholesterol, and members take tai chi and “gospelcise” classes — exercise to gospel music. Body & Soul also has made its way into the church’s kitchen. “We’re baking chicken now,” says Hatter. “Instead of punch and cake for small gatherings, we have fruit and vegetable trays, and nuts and grains. It’s a cultural change, a whole different mindset.”

Black churches have a long history of serving more than just the spiritual needs of congregants, making them a good fit with health-related efforts and even health-care services.

So Fuller set about getting the information into communities, collaborating with the AME Church to do so. Given the church’s Episcopal structure, by which information can be disseminated efficiently from bishops through clergy to a membership of some 2 million people, Fuller saw it as a readily available vehicle for preventive medicine.

Thanks in large part to her efforts, at its 2007 bishops’ conference the AME Church issued a policy statement that supports the urgency of HIV/AIDS education, prevention and care. But Fuller wanted to directly and immediately connect policy with practice. Prior to the conference, to be held in Columbus, Ohio, she learned that the meeting dates in June coincided with National HIV Testing Day. She saw an opportunity: make HIV testing available on-site. Doing so meant that the 21 bishops who serve in districts around the world could lead by example rather than by word alone. She worked with church leaders such that four trained counselors provided rapid testing right there at the Greater Columbus Convention Center. “It allowed people to take that first key step,” she says.

Both the policy statement and testing represent a fundamental shift in thinking, says Fuller. “It strips away the stigma. It essentially reframes HIV to place it in the realm of pathogenic viruses similar to those that cause influenza, the common cold, chicken pox and measles. HIV should not be thought of as God’s punishment for sin, but as a fragile virus whose transmission to cause the infectious disease AIDS can be prevented.”

Student volunteer Cheryl Barker (center) laughs with Silver Club members Doris Scerbak and Wylean Smith during a field trip the group took to Lodi Farms Nursery in October.
who often attends Body & Soul and other church events, toting water bottles, health brochures and cookbooks. “It starts with fruits and vegetables to reduce the risk of cancer, but it’s a really good gateway for interest in other healthy behaviors.”

Build it and patients will come

When it’s time for Jane Barney to have a physical exam, she gets behind her rolling walker and heads to Ann Arbor’s New Hope Clinic on foot. Barney is 93, and she has been a patient at the clinic since it opened in 2001. She likes that she can walk to the well-manicured, white clapboard building on her own from her downtown home and, since the clinic occupies the ground floor, she doesn’t have to navigate stairs or elevators with her walker.

But Barney isn’t only a patient — she, along with good friend and devoted New Hope member Dorothy Kirkpatrick — also helped found the clinic, a partnership between the U-M Turner Geriatric Center and New Hope Baptist Church. The founding mission of New Hope Clinic was to offer a point of entry into the U-M Health System where African-Americans over 55 would feel comfortable receiving primary health care, screenings, education and referrals. But the clinic would always be open to and welcome people from all backgrounds.

Barney came to Ann Arbor in the late 1960s with her husband, a clergyman, who was hired by St. Andrew’s Episcopal Church. Their children were grown, and she decided to earn a U-M master’s degree in social work. She worked for the University and became interested in geriatrics and the accessibility of health services.

And a leap of faith of sorts. “A healthy body is essential to a healthy individual and spirit,” he adds. “We can live life more abundantly when we eat the right things, exercise and stay on top of health conditions.”

Body & Soul grew out of a decade of church-based health intervention studies, funded by the National Institutes of Health. During the initial phases of this research, Ken Resnicow, Ph.D., now a professor at the U-M School of Public Health, was working at the Emory University Rollins School of Public Health. At the request of the National Cancer Institute and the American Cancer Society, Resnicow and his collaborators combined the most successful elements of each. Body & Soul was born.

When Resnicow joined the faculty four years ago, the University lent its support to the evidence-based program in order to further cultivate relationships with local minority communities. “The great thing is that the program opens the door,” says Aisha Langford, a health educator and minority outreach coordinator with the Comprehensive Cancer Center.
One day, she was stunned by a snippet of conversation she overheard between two African-American U-M staff members. “At the time,” Barney says, “Turner Geriatric Center was going strong, with support groups for older adults with vision loss, hearing loss and other needs and interests.” But the group members were almost exclusively Caucasian.

“I wonder why African-Americans don’t have these kinds of sessions,” she recalls hearing one employee comment to the other. “Barney began to wonder the same thing.

She gathered colleagues and undertook a survey of health care for African-Americans in the county. From that exploratory survey grew a black advisory group within the Geriatrics Center, supported by Chief of the Division of Geriatric Medicine Jeffrey Halter, M.D. Among the group’s recommendations was a special clinic that would provide culturally sensitive access to the Geriatrics Center. Members thought a church-based location for the clinic would help reach the patients it hoped to serve.

After much relationship-building over several years, the late Pastor Albert Lightfoot, New Hope Baptist Church’s founding pastor, agreed to provide space for the clinic in a house on church property. The University committed funds to renovate the ground floor of the house and to provide medical and administrative staff to run a clinic there.

It was not an easy road, Barney recalls. “It took a long search to find this place,” she says, and there was some resistance too. “But we just went ahead and did it. We just assumed — we hoped — that if the clinic developed, people would use it.”

People have. A recent prostate cancer screening drew 70 men — an overflow crowd for the small space and a significant one, since the death rate among black men from prostate cancer is double that for white men. “We knew that knowledge of the clinic would spread slowly in the black community by word of mouth,” says Barney. “And indeed, it’s still in the process of becoming known and trusted.”

That trust grows not only from thoughtful touches like the soothing rocking chairs and pictures in the reception area, but also from the dedicated care of a sensitive team. A nurse practitioner, social worker, medical assistant and outreach coordinator together take a holistic, “big-picture” approach to providing care at New Hope Clinic.

Challenges and rewards

Denese Meadows of Ypsilanti has been caring for her mother, Odesser Davie, who is 91 and has Alzheimer’s disease, since Meadows’ father died in 1999. Meadows works the midnight shift; her husband works days. Caring for her mother all day at home meant Meadows often had to forgo sleep. Services like Silver Club’s day program have helped change that. “If not for Silver Club,” she says, “my mom wouldn’t be able to stay with me and would have to be placed in a nursing home, which I’m hoping not to do.”

But it’s not just sleep — and peace of mind — that Meadows has gained. “I knew my mom loved church music,” she says, “but I didn’t know she loved swing music. I’m sure it takes her back to when she was a young woman. And painting — I never saw my mom paint, but she likes to dabble in arts and crafts. There are things Silver Club teaches us about our parents, and we can carry them over at home.”

The learning extends to the seemingly mundane: how to gently redirect conversation when her mother reads Meadows’ horoscope aloud for the 10th time or refuses a much-needed winter coat while the two are shopping. “There are a lot of behavioral pieces that come up that staff and volunteers help you with. Sometimes it’s overwhelming and you can’t think it all out by yourself,” says Meadows.

“This journey that I’m on, to care for my mom, it’s hard, very hard. But I wouldn’t trade it. My mom’s always been there for me, and now it’s my time to be there for her.”
Secrets of the Cilia

{ LONG-OVERLOOKED ORGANELLES HOLD SOME HEFTY KEYS TO HUMAN HEALTH }
Every year, thousands of babies lose the genetic lottery and are born with mutations in genes known as PKD1 or PKD2. Most of the time, the babies are normal at birth. But as they grow to adulthood, their kidney tissue will slowly be destroyed and replaced by large fluid-filled cysts. Eventually, about 50 percent will develop kidney failure and need dialysis or a kidney transplant to survive.

It’s called polycystic kidney disease, or PKD, and within the world of genetic disorders, it’s a common, life-threatening condition that affects 600,000 Americans. Physicians have no treatment, no cure, and many questions about PKD. Ben Margolis, M.D., a professor of internal medicine and of biological chemistry, believes the answers will be found in cilia.

Scientists like Margolis are just beginning to understand how much life depends on these tiny hair-like sensory antennae — thinner than a strand from a spider’s web — that are found on the surface of nearly every cell in virtually every organism on Earth. From roundworms to fruit flies, from algae to zebra fish, from mice to humans, evolution has relied upon cilia to help cells sense changes in their external environment.

Thanks to cilia, you can see the words on this page, smell fresh coffee brewing in the morning and hear birds chirping outside the window. Cilia regulate the growth of kidney cells and control how an embryo develops. They sweep particles and mucus out of the respiratory tract, nudge eggs down fallopian tubes, and help neurons in the brain grow new connections.

Until recently, cilia didn’t get much respect from scientists, because they were considered to be nothing more than leftovers from our distant evolutionary past — the cellular equivalent of wisdom teeth. But when researchers discovered that defects in cilia can cause human disease, the scientific community suddenly became very interested.

Highway for the Light

Anand Swaroop, Ph.D., a scientist at the Kellogg Eye Center, studies photoreceptor cells called rods and cones, which are found in the retina lining the back of the eye. These specialized neurons capture photons of light and transform them into electrical signals, which are processed by the brain to allow us to see.

According to Swaroop, the human retina contains about 120 million photoreceptor cells, and they are some of the hardest working cells in the body. Each photoreceptor produces about 6,000 light-grabbing molecules of rhodopsin or cone opsin every minute. That’s a total of 6 billion molecules synthesized every second in each human retina. All the molecular components required to make these proteins must travel through one slender cilium, which connects the photoreceptor’s inner and outer segments.

“It’s a very vulnerable connection, and that’s why we have so many blinding diseases that involve ciliary or transport defects,” says Swaroop. “Any defect in the synthesis, regulation, transport or transduction of all these molecules can quickly lead to the degeneration of photoreceptors. These are non-dividing cells, so if you lose too many of them, you go blind.”

Because the cilia connection in photoreceptors is so delicate, Swaroop says even small losses in protein function can compromise vision, even if cilia on other types of cells are not affected.

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Photo: Sunil Parapuram, Ph.D. (Swaroop Laboratory)
So far, scientists have linked about 10 human diseases to cilia-related defects. Researchers at the Medical School are studying these diseases, called "ciliopathies," to understand how cilia work and what happens when they don’t.

“There are many diseases involving cilia and many more we don’t even know about yet,” says Margolis. “This is a new field — only about 10 years old — and we still have more questions than answers.”

Someday, research on cilia could lead to new treatments for cystic kidney diseases or a cure for the blinding disorder called retinitis pigmentosa. Learning more about olfactory cilia involved in the sense of smell may even make it possible for future physicians to use scratch-and-sniff tests to diagnose many common diseases.

U-M scientists are enthusiastic about the importance of cilia to human health and medicine, but they caution that many years of research will be required before they can answer even the most basic questions about cilia’s structure and function.

After all, it’s taken millions of years for evolution to fine-tune the intricate connections between cells and cilia. The cilium will not give up its secrets easily.

GOING WITH THE FLOW

Most people tend to take their kidneys for granted. Filtering blood and making urine may not be the most elegant jobs in the human body, but they are among the most important.

Each about the size of a fist, the kidneys are made up of small filtration chambers connected by a drainage system of tubules. The interior surfaces of these tubules are lined with a layer of epithelial cells. And on the surface of every one of those epithelial cells is a single cilium.

Margolis has spent decades studying the proteins that control how epithelial cells develop in the kidney. Epithelial cells are in a constant state of turnover. As old cells die and are sloughed off the inner surface, the body must grow new cells to replace them.

The body keeps tight controls on the development of new epithelial cells, according to Margolis, because they can’t grow just any way they want to. All epithelial cells have polarity, meaning they are oriented in a specific direction in space and develop in a specific order. In kidney epithelial cells, the cilium always forms on the interior, or apical, side, so urine passing through tubules on its way to the bladder can flow over the cilium and bend it in the direction of the flow.

“The leading theory in polycystic kidney disease is that cilia sense urine flow and bend in response,” Margolis says. “A calcium channel mechanosensor at the base of the cilium senses bending. When the cilium bends, it sends calcium into the cilium, which sends a signal to the cell telling the kidney everything is cool.”

This sensing mechanism could have several important functions, according to Margolis. If tubules are blocked and the kidneys stop functioning, the signal could trigger tubule cells to start dividing in an effort to bypass the blockage. The sensing mechanism also could be important in directing kidney cells to grow in the proper direction.

“In polycystic kidney disease, we think this sensing mechanism goes awry,” Margolis says. “There is still normal urine flow, but the kidney’s sensing system is broken.”

Margolis explains that people with PKD are born with one normal copy of a polycystin gene and one mutated copy. The body uses the genetic code stored in polycystin genes to make many of the proteins found in cilia on kidney epithelial cells.

Kidney epithelial cells can function normally with one mutated polycystin gene, according to Margolis. But if a second mutation knocks out the normal copy of the gene, it prevents the cilium’s signal from reaching the cell. No longer able to sense the normal flow of urine, Margolis believes the epithelial cell loses its polarity and starts dividing uncontrollably in all directions to form a cyst. As mutations accumulate, more kidney cells are affected and more cysts develop.
“If we can understand how defects in cilia block their signals to epithelial cells, we may be able to stop or reverse the progressive kidney damage,” Margolis says. “PKD is a slowly progressing disease, so even if we can just slow the growth of kidney cysts, people may be able to outlive it.”

**MAKING CONNECTIONS**

After a kidney epithelial cell divides to make two new cells — a process called mitosis — each cell must build a new cilium. The process begins with the centrosome, a structure that organizes microtubules which pull apart the cell’s DNA during mitosis to make two sets of chromosomes. Once cell division is complete, the centrosome moves to the apical side of the new epithelial cell to form a foundation called a basal body. The cell then builds a cilium on the basal body by moving proteins up a scaffold made of microtubules generated by the centrosome. If something goes wrong during this complex process, the cell won’t have a cilium.

“Cilia are protruding organelles in the middle of the cell, and they have to be built like a high-rise is built,” says Friedhelm Hildebrandt, M.D., the Frederick G.L. Huetwell Professor for the Cure and Prevention of Birth Defects, who is also a professor of pediatrics and of human genetics, and a 2007 Doris Duke Clinical Scientist. “One needs an elevator to bring the tubulin scaffold out there, and motor proteins to transport the cargo up and down the scaffold.”

The trafficking of proteins up and down the cilium is called intraflagellar transport, and it is one of the most intriguing and baffling of cilia’s many secrets. Somehow the basal body knows which proteins to send up the cilium, depending on the cell’s function. But how this decision is made or what happens to proteins as they move up one side of the cilium and down the other is still a mystery.

Some of the molecular cargo moving up and down the cilium includes polycystin-1, polycystin-2 and other proteins involved in cystic kidney disease. Hildebrandt says scientists now believe that proteins from almost all the genes involved in cystic kidney disease are located in cilia, in basal bodies or in the centrosomes.

Hildebrandt and his research team study genes that, when mutated, cause a type of cystic kidney disease called nephronophthisis (pronounced nephrono-THI-sis), a rare degenerative disease that leads to kidney failure in infants, children and young adults. Kidney damage from nephronophthisis is similar to that of polycystic kidney disease, except the kidneys get smaller instead of larger and have more scarring. So far, Hildebrandt has identified 10 genes with mutations that cause different types of the disease.

In the process of searching for nephronophthisis genes, Hildebrandt’s research team discovered some interesting things about cilia. For example, children with a mutation in the gene for NPHP5 not only had nephronophthisis, they also had a blinding disease called retinitis pigmentosa. The connection between kidney disease and eye disease, Hildebrandt says, is found in cilia. Just like kidney epithelial cells, photoreceptor cells in the retina of the eye depend on cilia to function normally.

Tracking down the NPHP6 gene led to another connection with a rare disorder called Joubert syndrome. Babies with Joubert syndrome are born with nephronophthisis, retinitis pigmentosa and severe mental retardation caused by defective cilia on brain neurons.

One of the most devastating ciliary diseases is an inherited disorder called Bardet-Biedl syndrome. Depending on the combination of mutant genes they inherit, children with the syndrome can have retinitis pigmentosa, mental retardation, extra fingers and toes, cystic kidney disease, diabetes, obesity, an impaired sense of smell and/or infertility.

How can mutations in just a few genes lead to defects in so many different parts of the human body? Since

**FROM ROUNDWORMS TO FRUIT FLIES, FROM ALGAE TO ZEBRA FISH, FROM MICE TO HUMANS**, evolution has relied upon cilia — found on the surface of nearly every cell in virtually every organism on Earth — to help cells sense changes in their external environment.
all known Bardet-Biedl genes generate proteins that are present in cilia, basal bodies or centrosomes throughout the body, even one mutation can have multiple — and seemingly unrelated — effects.

“It seems that defective ciliary proteins can lead to disease in virtually all organ systems,” says Hildebrandt.

Consider that a protein involved in cargo transport on cilia has been found in plaques and tangles from brains of people with Alzheimer’s disease. The abnormal growth of cancer cells may be associated with a defect in centrosomes. Defective cilia have been linked to neural tube defects like spina bifida. Scientists have recently learned that signaling molecules called Hedgehog and Wnt, which regulate every phase of cellular and embryonic development, don’t work without cilia.

It’s ironic how much the normal functioning of the human body depends on a common cellular structure that was basically ignored by scientists until just 10 years ago. Now that researchers finally realize how important they are to human health and disease, cilia already may have lost their biggest secret. ■

Friedhelm Hildebrandt’s research has been supported by Irv and Carol Smokler, U-M alumni from Boca Raton, Florida.

Picking Up the Scent

Evolution has a lot of resources invested in the human sense of smell, according to Jeffrey R. Martens, Ph.D., an assistant professor of pharmacology who joined the Medical School faculty three years ago. It takes the activity of at least 300 human genes — more than 1 percent of the entire human genome — to smell the difference between a banana and a steak.

Cilia are on the front lines of the body’s olfactory system. They grow from the ends of long olfactory neurons — the only neurons in the body with a direct connection between the outside environment and the brain.

Millions of intertwined olfactory cilia fill a mucus layer lining the inside of the nasal passages. When you inhale an odor, odorant molecules bind to matching receptor proteins on the surfaces of cilia from specific olfactory neurons to create a biochemical signal.

The human nose needs so many olfactory cilia to sort out the seemingly infinite number of different combinations in the odorant molecules we inhale every day, according to Martens.

Genetic mutations that affect cilia or their proteins can disable this delicate sensory machinery. The result is anosmia, or the inability to smell — a condition that Martens says often goes undiagnosed by physicians and unnoticed even by people who have it.

“If your sense of smell has been deficient since birth or declines gradually over time, you may not realize that anything is wrong,” he says.

Martens adds that many diseases and medical conditions — including obesity, developmental disorders, Leber Congenital Anamosis (a form of childhood blindness), sexual dysfunction, Alzheimer’s disease and depression — may be associated with defects in olfactory cilia that affect the sense of smell.

“Olfactory function tests may be a useful, non-invasive screening tool for these and other cilia-related diseases,” Martens says. ■

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Virtual anatomy. Simulation. The Web, iPods, blogs, streaming video. Technological innovations are spurring the biggest transformation of medical education in a century, and a groundbreaking online course in clinical therapeutics is already proving the potential.

At the beginning of the Medical School’s new advanced course in clinical therapeutics — how to treat patients with drugs — you don’t walk into a classroom and sit down next to other students. You don’t take out a notebook and a pencil and attend to the professor at the front of the room.

Here’s what you do: Sitting in your kitchen at midnight or a coffee shop at lunchtime, you boot up your computer and open your Internet browser. You open CTools, the University’s online course management system, then click on the tab labeled “M-4 Therapeutics.” Next, you click on “Course Introduction,” then hit the play button on a streaming-video portal, whereupon the figure of a man in a red shirt and patterned tie, standing by the statue of Hippocrates in the courtyard behind Taubman Library, says to you:

“Hi, I’m Dr. Cary Engleberg, and this is the senior course on advanced medical therapeutics. So, welcome.

“This course is going to be different from others that you’ve taken in medical school in that the content … is almost entirely online. We’ll be meeting a few times during the month, but most of the information you’ll get from this course will come across your computer instead of person-to-person.

“The idea of the course is that it attempts to simulate the kind of experiences that you have when you’re working on the wards. … You’re presented with cases online and posed with certain questions to deal with. … And, online, you’ll be able to hear some experts say what they think the correct answers to those questions are.”

If this is not the future of medical education, it is at least a big arrow pointing in that direction. Certainly, the new “M-4 Therapeutics,” launched in January 2007, is the most advanced initiative to-date in the technology-based reformation now underway in the Medical School curriculum.

Of course, nearly every college and graduate school now does a lot of academic business online. Most courses employ at least one electronic tool or another, from online syllabi to discussion blogs to electronic gradebooks. The Medical School has been using such aids for years. Among the most important is the pioneering Professional Skill Builder, a Web-based series of tutorials developed and edited by Richard Judge, M.D. ➤
(Residency 1957), adjunct clinical professor of internal medicine, and Rajesh Mangrulkar, M.D. (Residency 1998), associate professor of internal medicine, and managed by Chris Chapman, media services manager at the Medical School’s Learning Resource Center (LRC). The tutorials help students develop advanced cognitive skills through highly realistic simulations, peppered with feedback on their performance throughout each module.

But the pressures of the managed-care revolution — limits on doctor-patient interactions, heightened complexity of clinical case loads, the frenetic pace of outpatient care — are spurring deeper thought about how medical schools must adapt. These trends, among others, have led Dean James Woolliscroft, M.D. (Residency 1980), to encourage fundamental innovations in the use of technology in the Medical School. The idea is not simply to help faculty and students perform traditional education tasks more easily or efficiently, but literally to transform the way students become physicians.

The course is designed to help students develop skills in finding information and making decisions that will outlast all the inevitable changes in drugs and therapies they will see during their careers.

“If you look around at our competitors, everyone is looking to change their medical student education program,” says Mangrulkar, who serves as director of ENCORE, a highly innovative pilot program for a cadre of M.D. students entering in 2009. “But most people are playing the game that you work with the tools you have, and you try and fit these new cutting-edge experiences within the framework of what already exists. Very few people are trying to take apart medical student education and put it back together in a way that makes sense.

“Dean Woolliscroft’s vision from the beginning has been to say, ‘We need to be out in front of this, just like we were 90 years ago when medical education went through a transformative process as a result of the [Abraham] Flexner report [in 1910]. Now it’s time for us to do it again.’ And I think we can.”

Making the future

If the best way to predict the future is to start making it, then Engleberg may have the clearest vision at the moment. His immersion in the process of creating an online course began in 2006 with a phone call from Joseph Fantone, M.D., associate dean for medical education. Fantone asked Engleberg, who is a professor of internal medicine and chief of the Division of Infectious Diseases, to develop a new fourth-year course that would advance students’ decision-making skills in clinical therapeutics. Fantone felt it should be a course taught principally online. He made a similar call to Chapman, asking him to collaborate with Engleberg.

“I wanted to combine adaptable, cutting-edge technology with learning outcomes focused on advanced cognitive skills,” Fantone says, “and also offer our students a certain level of flexibility. This new online therapeutics course — required for all our senior medical students — was the perfect place to test an approach that met all of these goals.

“We’re extremely fortunate to have an incredibly high level of educational, medical and technical expertise within our educational program,” says Fantone. “The course has been successful beyond what I imagined.”

Chapman and Engleberg were well-suited to the task. Engleberg was known as an especially creative faculty member and an eager innovator in the use of technology in the classroom. Chapman, trained as a documentary filmmaker, had long experience in developing original educational technology.

The course was well-chosen for an online venture. If taught in the classroom, it would demand a great deal of faculty resources. Also, students in their fourth year are frequently away from Ann Arbor on the hunt for residencies; an online course would allow them to travel without missing course material. And finally, the class was to focus on problem-solving and medical decision-making, not hands-on skills.

“If we’re teaching students how to do an appendectomy, distance learning is not the way to do it,” says Casey White, Ph.D., assistant dean for medical education. “Technology isn’t the answer to everything, but in particular cases, it
provides us with enormous potential for helping students with different learning styles and different learning needs to master the things they need to master.”

Engleberg knew of no course elsewhere that did what he wanted this course to do: help students develop skills in finding information and making decisions that would outlast all the inevitable changes in drugs and therapies they would see during their careers. He wanted them to test their wits against actual cases. He wanted them to see how expert clinicians actually talk about critical decisions in complex cases. And all of this should be enhanced, not hindered, by online delivery.

“For first- and second-year students learning tends to be more passive,” he says. “They all work to master a body of knowledge in lectures and small groups, and everybody learns the same thing. But in the third and fourth years, and for the rest of their lives, learning is different. They’re involved with a case and a patient. There is no curriculum, really. The curriculum is the entire library and the entire Internet. Your education branches in the direction that fits the clinical experiences you have. The evaluations, then, assess judgment and processes of thinking, not how much you can pack into your brain.

“What interests professors teaching on the wards and in the clinics is: How well can students gather information? How well can they synthesize it? Can they come up with a diagnosis? You have to have a certain body of knowledge in order to do that, but here, the skills are different.”

Week after week for months, Engleberg and Chapman met and talked. At first, Engleberg imagined each case study set up in an expanding chain of hyperlinks. Students would be presented with a case and a question; then, depending on their answers, they would link to another question, then another. But this was technically too complicated. Chapman kept emphasizing the need for simplicity. Based on Engleberg’s ideas, he would create a rough form for Engleberg to experiment with to see how it flowed. Then the two would talk further, and refinements began to emerge.

Meanwhile, Engleberg consulted several colleagues recognized for their excellence as clinical teachers. He asked each to suggest a few actual cases to illustrate particular problems in their specialties. And he asked them to comment on the cases in front of a camera.

That was central to his vision of the course. He wanted students not only to seek out and read the authoritative literature — all available as PDF files or on the Web — but also to simulate the experience of making rounds with an attending physician, hearing him or her talk about a case informally, making decisions amid shades of gray.

He and Chapman made the video shoots easy and quick, usually just in the faculty member’s office with a hand-held camera. There were no scripts, no special preparation — just Engleberg eliciting frank answers to clinical questions. He told them not to worry about the occasional “um” or “ah.” Then Engleberg himself would edit the video and ship it to Chapman. Chapman and his team at the LRC — Jason Engling, John Westfall and Aki Yao — then processed the video and programmed the cases for the Web.

To craft effective quizzes, Engleberg consulted with White. He told her essays would be impractical, and she said multiple-choice questions could not assess the process by which students were reaching answers — the key criterion of the course. So they worked out ways for students to explain how they reached answers, with partial credit given for evidence of critical thinking skills.

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**A New Kind of Medical School?**

The potential of new technology is leading administrators and faculty to ask such path-breaking questions as:

- **Does medical school need to be a four-year affair for every student?** If the curriculum were unleashed from the constraints of traditional scheduling — could a student then complete the degree in less than four years, or more, based on measurements of his or her competency, rather than the completion of courses?

- **Must medical school be confined to the boundaries of the traditional campus?** If coursework is presented well enough online, via “distance learning” tools such as streaming video and interactive media, couldn’t many courses be completed anywhere there’s an Internet connection?

- **Can medical students take a larger role in their own education, mapping learning plans that diverge from those of their colleagues?**

- **Is it possible for faculty to spend less time conveying basic information from the front of a lecture hall, and more time in close contact with students, fostering advanced skills in analysis and judgment?**

No one knows precisely where such questions may lead, or what shape a new kind of medical school might take. But it’s likely that the U-M will be among the first to find out.

*What do you think about increasing technology in medical education at the U-M? Send your opinion to the editor at rkrup@umich.edu.*
A gold standard

It took Engleberg and Chapman roughly nine months just to create the first module — on infectious diseases, Engleberg’s specialty. Then, as the design gelled, they added more modules until, in January of this year, the course was ready for its first students.

Cases, readings, quizzes — all appeared in an elegantly simple online smorgasboard. Learning objectives, and how to reach them, were laid out with far greater clarity than in many conventional courses. Beyond attending a few in-the-flesh seminars, students could do the work anywhere from the Taubman Library to Tanzania, at any time of day, with astonishing freedom to tailor the course to their own needs — especially to go fast or slow, to choose or ignore specific resources, and to fill the gaps in their own stores of knowledge.

Take one case study as an example. It’s one of three cases in respiratory therapy during the first week. You find six learning objectives listed, including: “Know how acute exacerbations (status asthmaticus) are treated.”

That objective leads to Case #2: A male college student, after his usual three-mile daily run, has difficulty breathing and is hospitalized and intubated. His condition is scary-critical. His history, treatment by EMS techs, and physical and lab tests are reported to the student.

Then comes the first question — “Which of the following will be useful elements in the care of this patient?” — followed by six choices. If you click on this point. The most important thing is that the patient is oxygenated well.”

It’s hard to imagine a student who fails to appreciate the admission that even the best doctors get scared — and, therefore, who fails to remember the remedy.

The course has now been taught three times, with data showing impressive learning results. The response from students themselves has been highly positive.

Former student Caesar Gonzales (M.D. 2007) found the faculty videos especially helpful. “Research articles are

“For first- and second-year students, learning tends to be more passive. But in the third and fourth years, and for the rest of their lives, they’re involved with a case and a patient. There is no curriculum, really. The curriculum is the entire library and the entire Internet.”

—Cary Engleberg

“B. Parenteral beta2-agonists,” you’re told that’s “not recommended” and why, then directed to the PDF file of a seven-page article, “The Crashing Asthmatic,” in American Family Physician, plus other references.

Each of the six answers leads the student to helpful information. And at any point, the student can click on perhaps the most rewarding part of the presentation — a two-minute video of Cyril Grum, M.D. (Residency 1983), professor of internal medicine and associate chair for undergraduate medical education, an expert on exercise-induced asthma, among other topics.

What’s striking about Grum’s talk is not just its casual thoroughness, but its pithiness and candor. He begins by saying: “This person meets the definition of status asthmaticus, which is, you know, essentially asthma out of control. … These are moments when even the most experienced clinicians can feel a tinge of panic and you probably should too, at hard and dense,” he says. “But in the videos, faculty members were able to break things down in a way that was easy to absorb.”

As Engleberg and Chapman refine the course further, White is urging them to publish an account of how it works — and how well.

“When faculty say to me, ‘What can I do that’s better than lecture, or that’s more interactive?’ I can show them Cary’s program,” White says. “I say, ‘Here’s what we’re capable of doing, and here’s the kind of information we can get back for you.’ So I do think we’re going to march that way, and Cary’s course has allowed me to have this gold standard, to say, ‘Here’s what we’ve done; how can we make it work in your course with your material?’ It’s exciting, and it works!”

Web exclusive! Experience firsthand a sample of the online “M4 Therapeutics” course! www.medicineatmichigan.org/magazine

Shelby Stewart, a fourth-year student enrolled in the clinical therapeutics course, accesses the course material from her off-campus apartment.

30 Fall 2007
A new and extraordinary gift to the University of Michigan Health System is making possible a new and extraordinary institute — one with a mission of supporting fundamental research to advance the understanding of the causes, treatment and prevention of a broad range of human diseases.

The A. Alfred Taubman Medical Research Institute, being established in the Medical School, is named for the retail pioneer whose funding and vision led to its creation. In addition to $7 million of support for research into neurological diseases being conducted by neurologist Eva Feldman, a new $15-million commitment by Taubman creates an endowment whose earnings will fund the institute, and the research of individual Taubman Scholars within the institute, for generations to come.

The first five Taubman Scholars, including Feldman, have been chosen from among the Medical School’s top scientists. Each was selected for his or her remarkable creativity and research that holds the potential to significantly advance the development of a cure or preventive treatment for a human disease.

Typically, scientists will receive three-year grants that will provide $200,000 per year for their laboratory teams to pursue the most promising possibilities in their work. The scholars also will serve as advocates for research by taking part in efforts to educate the public about the importance of biomedical research, and of public and private support. At the end of three years, the scholars’ grants may be renewed, and new scholars may be chosen from among the Medical School faculty, by an oversight committee chaired by U-M Executive Vice President for Medical Affairs Robert Kelch (M.D. 1967, Residency 1970). In addition to Kelch, the committee includes Medical School Dean James Woolliscroft, M.D. (Residency 1980); Kim Eagle, M.D., co-director of the Cardiovascular Center; Feldman, who was the first Taubman Scholar chosen; Taubman; and Jeffrey Miro, a Michigan-based attorney and adjunct professor at the U-M Law School. In November, Feldman was named director of the institute.

Taubman, who studied architecture at the U-M, borrowed $5,000 at age 26 to found a small development company, and three years later — in 1953 — opened his first shopping center in Flint, Michigan. Today, The Taubman Company is one of the world’s largest developers and managers of commercial real estate, with a portfolio of shopping malls located in major markets from coast to coast, as well as in newly-emerging markets across Asia.

“[We are] on the doorstep of amazing scientific discoveries that will dramatically improve the health of people around the world. I am especially proud that [this] groundbreaking work is being done right here in Michigan.”

— A. Alfred Taubman

With his gift to create the A. Alfred Taubman Medical Research Institute and support research at the Medical School, Taubman has solidified his position as one of the University of Michigan’s leading donors. Taubman’s cumulative giving to the University now stands at more than $60 million — more than $56 million of which has been given as part of the University’s $2.5 billion Michigan Difference fund-raising campaign.

The first five Taubman Scholars are:

Valerie Castle, M.D. (Fellowship 1990), a pediatric cancer specialist whose lab is working on strategies to make cancer cells “commit suicide” in the most common form of solid-tumor cancers in children. Castle chairs the Department of Pediatrics and Communicable Diseases, and holds the Ravitz Foundation Professorship in Pediatrics and Communicable Diseases.

Eva Feldman (M.D. 1983, Ph.D. 1979), a neurologist whose laboratory has already received support from Taubman to fund research on the use of stem cells and other novel approaches to treat amyotrophic lateral sclerosis, also...
known as Lou Gehrig’s disease (see “Taubman Gift Advances ALS Research,” summer 2007 Medicine at Michigan). Feldman heads the Program for Neurology Research and Discovery and is the Russell N. DeJong Professor of Neurology.

David Pinsky, M.D., a cardiologist who studies proteins involved in preventing the formation of clots inside blood vessels, which could lead to a new class of drugs to prevent strokes and heart attacks. Pinsky also serves as chief of the Division of Cardiovascular Medicine; the J. Griswold Ruth, M.D., and Margery Hopkins Ruth Professor of Internal Medicine; and as a director of the Cardiovascular Center.

Yehoash Raphael, Ph.D., a cell biologist who is developing ways to grow stem cells into the auditory hair cells that are crucial to our ability to hear, and to implant those cells into deaf ears to replace damaged cells and restore hearing. Raphael is the R. Jamison and Betty J. Williams Professor of Otolaryngology and a member of the U-M Kresge Hearing Research Institute.

Max Wicha, M.D., a cancer researcher who reported the first finding of stem cells in a solid tumor — the small number of cells that fuel the tumor’s growth. Wicha serves as the founding director of the Comprehensive Cancer Center and the Distinguished Professor of Oncology.

——Kara Gavin and Glen Sard

For more information, a podcast of Taubman and the five inaugural Taubman Scholars discussing this gift and commenting on the Taubman Institute’s potential to accelerate U-M research, as well as audio comments by the scholars, visit: www.med.umich.edu/opm/newspage/2007/taubmaninstitute.htm

Mulkey Professorship Pays Tribute to Michigan Training

Dorothy M. Mulkey, M.D. (Residency 1972), of Flushing, Michigan, has established a bequest which will create the Dorothy M. Mulkey, M.D., Endowed Professorship in Rheumatology, as well as the Dorothy M. Mulkey, M.D., Endowed Research Fund in Rheumatology. Mulkey, who was among the first women to complete a residency in rheumatology at Michigan, was a protégé of Giles Bole (M.D. 1953, Residency 1956), then chief of the Department of Rheumatology and later dean of the Medical School. After a career as assistant dean at the Michigan State University medical school and nearly 30 years in private practice, Mulkey decided to leave the bulk of her estate to Michigan where she trained.

Ravitz Foundation Spurs Translational Cancer Research

A $1 million gift from the Ravitz Foundation, a Southfield, Michigan-based philanthropic organization with interests in health care and cancer research, has created the Ravitz Foundation Phase I Translational Research Unit in the Comprehensive Cancer Center. Phase I research involves clinical trials which translate basic laboratory research into experimental therapies; such translational research is the first step in the process of testing a new therapy on actual patients. Burt Shifman, a director of the foundation, refers to the gift as “the fuel to do the research that needs to be done.”

Edward Ravitz, a native of Kalamazoo, was a builder and real estate developer who, at the time of his death in 1999, had helped build more than 15,000 single-family and apartment homes in Michigan and another 12,000 in other states.
Towsley Foundation Supports New Eye Imaging Center

The Harry A. and Margaret D. Towsley Foundation has awarded $1.5 million to the U-M Kellogg Eye Center to help fund a state-of-the-art eye imaging center, to be named for the Towsleys. The new center will capture images of the eye to be used in gathering information about eye disease. The Midland, Michigan-based foundation’s generosity has benefited many areas of the University and its Health System. Harry Towsley (M.D. 1931, Residency 1934), a member of the Medical School faculty for 37 years, and his wife, Margaret Dow Towsley, were both major benefactors to the U-M, and the foundation has continued that tradition of generosity to Michigan over the years.

Vincent Professorship Advances Diabetes, Metabolism Research

A gift from the Molly Vincent Foundation has established the Marilyn H. Vincent Professorship in Diabetes Research, honoring the family of Marilyn H. (Molly) and Burton J. Vincent and helping advance leading-edge diabetes and metabolism research at Michigan. Molly Vincent had type 2 diabetes mellitus, and one of her sons, Burton Jr., is afflicted with type 1. Both illnesses significantly affected the Vincent family and led to Molly’s wish that her estate contribute to future advances in diabetes research. Burton Jr. and his brother, John, are carrying out their mother’s wishes by creating the Vincent Professorship. Molly Vincent was an Ann Arbor native, and Burton Sr. was a visionary businessman who received his business degree from the U-M in 1948.

Keith Pomeroy Kicks-off “Wolverines Against Prostate Cancer Challenge”

A leadership gift of $100,000 from Keith Pomeroy of Birmingham, Michigan, is catalyzing a challenge posed by the Prostate Cancer Foundation, the world’s largest philanthropic source of research funding for prostate cancer. The foundation has challenged the Michigan Center for Translational Pathology to raise $1 million, which the foundation will match dollar-for-dollar to accelerate the search for a cure and better treatment.

Pomeroy, general partner with Pomeroy Investment Corporation, a privately held real estate and health care investment company, was diagnosed with prostate cancer, joining the “reluctant fraternity,” as he calls it, of more than 2 million men dealing with the disease. Treated at the U-M, Pomeroy has emerged as an energetic advocate of the work of Arul Chinnaiyan, M.D., Ph.D., who, along with his research team in 2003, found that two genes unique to prostate cancer fuse together and can be easily detected, resulting in a perfect target for cancer-killing therapies. With targeted therapy, physicians will be able to kill prostate cancer cells without damaging healthy cells. Chinnaiyan’s work also holds important implications for other common solid tumors, including cancer of the breast, lung, colon and skin.

The Prostate Cancer Foundation has awarded the U-M close to $5 million for prostate cancer research during the last decade. Pomeroy says that by stepping up its commitment through the Wolverine Challenge, the foundation is helping “accelerate the potential of [Chinnaiyan’s] transformational discovery.”
PROFESSORSHIPS RECENTLY INAUGURATED

The William S. Smith Collegiate Professorship in Orthopaedic Surgery


The Leland and Elaine Blatt Family Professorship in Pediatric Hematology/Oncology

Moved by the prospect of extending lives and potentially curing children with serious forms of cancer, Elaine Blatt, through her family foundation, established the Leland and Elaine Blatt Family Professorship in Pediatric Hematology/Oncology. On August 29, Associate Professor of Pediatrics and Communicable Diseases and of Internal Medicine Gregory A. Yanik, M.D., was installed as the first Blatt Professor.

The Alexander J. Trotman Professorship in Leukemia Research

A longtime supporter of the Comprehensive Cancer Center with her husband, Alexander, Valerie Trotman established the Alexander J. Trotman Professorship in Leukemia Research following his death in 2005. Professor of Internal Medicine and Cancer Center Associate Director of Translational Research Moshe Talpaz, M.D., a leading clinical investigator in hematologic malignancies, became the first Trotman Professor on October 1.

The Reed Nesbit Professorship in Urology

In tribute to the career and life of one of the top urologists of his time, family, friends and colleagues in the Department of Urology have established the Reed Nesbit Professorship in Urology. On October 11, Professor of Urology Edward J. McGuire, M.D., was installed as the first recipient of the Nesbit Professorship, which supports an outstanding tenured faculty member in the Department of Urology.

—Kevin Bergquist

LIVES LIVED

John Steuer Dobson, Community and U-M Supporter, Dies at 88

The Ann Arbor community and the University of Michigan lost a loyal and dedicated friend when John Steuer Dobson died on July 19, 2007. Born in Ann Arbor in 1918, he lived his entire life here. Known to his many long-time friends as “Honest John,” he carried on a three-generation family tradition of community involvement and philanthropy in addition to pursuing a long and distinguished legal career.

Dobson graduated from Michigan Phi Beta Kappa and lettered in track as a half-miler. A graduate of the Law School, he championed many causes during his career, including successfully representing U-M faculty members investigated by the House Un-American Activities Committee. He was a principal in several firms bearing his name and served three elected terms on the Ann Arbor City Council, as well as on many boards and commissions. Dobson was a founder of the Ann Arbor Community Center, the Huron Valley National Bank, and the Huron Valley Tennis Club where he was a sought-after partner and feared adversary.

Dobson’s generosity benefited a number of causes within the U-M Health System, including research into Alzheimer’s disease and related disorders, for which he and his wife established the John S. and Alice B. Dobson Research Fund in the Medical School. He will be remembered for his ebullient spirit, his definite opinions, his support of Michigan athletics, his love of music, his sense of humor, and his love of and devotion to his family. Dobson is survived by his wife of 25 years, Alice, two daughters, two stepdaughters, six grandchildren and five great-grandchildren.
### 1960s

**Jerry A. Shields** (M.D. 1964) is director of the Ocular Oncology Service at Wills Eye Institute and professor of ophthalmology at Thomas Jefferson University in Philadelphia, Pennsylvania. He has been active for 30 years in the care of patients with ocular tumors, and in clinical research to improve methods for the diagnosis and treatment of eye cancers. He resides in Bryn Mawr, Pennsylvania, with his wife, Carol Shields, M.D., and their seven children.

### 1970s

**Richard F. Lockey**, M.D. (Residency 1970), has been named one of the first six Distinguished University Health Professors at the University of South Florida (USF) Health Sciences Center College of Medicine. His peers recommended him for the honor, which was given based on substantial achievement in research, teaching or clinical care. Lockey serves as director of the Division of Allergy and Clinical Immunology and as professor of medicine, pediatrics and public health at USF. He resides in Tampa, Florida.

**Walter Willett** (M.D. 1970) has co-written *The Fertility Diet*, outlining dietary, exercise and lifestyle changes to help women increase fertility. Willett is chair of the Department of Nutrition at the Harvard School of Public Health, and a professor of medicine at Harvard Medical School. He has previously co-authored *Eat, Drink, and Be Healthy*, and resides in Cambridge, Massachusetts.

### 1980s

**Lawrence Chin** (M.D. 1987) has been professor and chair of neurosurgery at Boston University School of Medicine and neurosurgeon in chief at Boston Medical Center since May 2006. He was previously professor of neurosurgery and medical director of the Gamma Knife Center at the University of Maryland. He resides in Wayland, Massachusetts.

### 1990s

**Emmanuel J. Zervos** (M.D. 1992) has been appointed professor and chief of the Division of Surgical Oncology at the Brody School of Medicine at East Carolina University in Greenville, North Carolina. He also will serve as associate director of the Leo W. Jenkins Cancer Center there. For the first six years of his career, Zervos established his clinical and research expertise in the diagnosis and treatment of hepatobiliary malignancy at the University of South Florida/Moffitt Cancer Center, and continues these studies in his new appointment.

#### Lives Lived

**Norman F. Bach** (M.D. 1948), of Chelsea, Michigan, died on June 11, 2007, at age 86. A longtime resident of Owosso, Michigan, Bach practiced internal medicine at the former Owosso Medical Group from 1952-90, and served as its president for 10 years during that time. He also served as president of the Shiawassee County Medical Society and as chief of staff at Owosso Memorial Hospital. He was a fellow of the American Academy of Physicians and a member of the Society of Internal Medicine. Bach was a member of the Owosso Rotary Club and Salem Lutheran Church, among other organizations, and was an Army veteran of World War II. He enjoyed gardening, fishing, golf, crossword puzzles, following the Detroit Tigers and spending time with his family. Bach is survived by his wife of 62 years, Jean, five children and seven grandchildren.

**George W. Cheek Jr.**, M.D. (Residency 1958), 78, of Burlington, North Carolina, died on June 12, 2006. He was a veteran of the U.S. Navy and served in World War II. Cheek, a surgeon, is survived by his wife, Peggy, four sons, nine grandchildren and two great grandchildren.

**Emma Jane Conklin** (M.D. 1949) died on March 13, 2007, in a hospital near her home in Troy, Michigan. She was 82. Conklin specialized in internal medicine and nuclear medicine. She was the only woman to hold the position of executive administrator at Wayne County General Hospital, where she worked for most of her career. Conklin liked to travel, especially to Scotland, and enjoyed reading and spending time with her family, including a niece whom she mentored to become a doctor. She was preceded in death by her husband, Norman A. Nelson, M.D., and is survived by a son.
Peter VanVechten Hamill (M.D. 1953), 80, of Annapolis, Maryland, died of complications from pneumonia on March 10, 2007. He was the scientific director and medical coordinator under U.S. Surgeon General Luther L. Terry, who in 1964 issued the groundbreaking study stating that smoking was the major cause of lung cancer and other diseases. He served as chair of a government study that contributed to the creation of the growth and development charts used by nutritionists and physicians. In addition to his medical career, Hamill served in the Navy during World War II and was a commissioned officer in the U.S. Public Health Service. He was an avid sportsman and a Golden Gloves boxing champion at Notre Dame in 1944. He enjoyed sailing and researching his ancestors’ roles in the Revolutionary War. He is survived by his wife, Margot, four children and 11 grandchildren.

Morris Weiss (M.D. 1951, Residency 1956), died on June 1, 2007. He was 82. Weiss received his bachelor’s degree in science from the U-M College of Literature, Science, and the Arts in 1947 before completing his medical degree and residency here. He is survived by his wife, Fae, of Bloomfield Hills, Michigan.

Richard Lowell White, M.D. (Residency 1967), 73, died June 9, 2007, at his home in Yarmouth, Maine, after an eight-year battle with cancer. After completing residencies in surgery at the Boston City Hospital, and in cardiovascular and thoracic surgery at the U-M, White joined Chris Lutes, M.D., at the Maine Medical Center in Portland. As the first board-certified cardiac surgeons in Maine, White and Lutes initiated and improved the standard techniques of cardiopulmonary bypass and cardiac surgical patient care management in the state. White appreciated and supported Maine artists, played piano and studied jazz. He also enjoyed hiking, camping, sailing and training Labrador retrievers for field trials. He is survived by his wife, Catherine, two children and two stepchildren.

Kenneth W. Yost (M.D. 1954), of Port Huron, Michigan, died June 20, 2007, at age 90. He served in the U.S. Army Air Corps during World War II. Yost practiced pediatrics and obstetrics in Marysville, Michigan, for 42 years and presided over more than 7,000 deliveries. He also was on the staff of Mercy Hospital and Port Huron Hospital. Yost enjoyed electronics and golf. He was preceded in death by his wife, Alma, in 2003, and is survived by four sons and two grandsons.

REUNION ’07: FRIENDS, MEMORIES, TOURS … AND VICTORY!

Medical School alumni from classes ending in “2” and “7” enjoyed meeting old friends — and making new ones — during Reunion ’07 in October. Friends gathered to celebrate and reminisce during dinners, campus tours, tailgate parties, and, of course, during the Michigan Wolverines’ victory over the Minnesota Golden Gophers, 34-10.

Reunion weekend also marked the fall meeting of the Medical Center Alumni Society (MCAS) board of directors, during which the board thanked outgoing President Clifford L. Craig (M.D. 1969) and welcomed incoming President James C. Hays (M.D. 1977). The board also welcomed new MCAS board members Jean Holland (M.D. 1977) and James K. Sobeski (M.D. 1993).

Reunion ’08 will take place September 26-27, and alumni from classes ending in “3” or “8,” as well as emeritus alumni, can participate in planning the event by contacting Assistant Director of Alumni Relations Julie Antis at (734) 998-7703 or antisj@umich.edu.

On the Web:
More photos from Reunion ’07
More information about MCAS
www.medicineatmichigan.org

CALL FOR MCAS AWARD NOMINATIONS

The Medical Center Alumni Society annually bestows awards on medical professionals who have demonstrated exceptional leadership. Awards include the Distinguished Achievement Award, Early Distinguished Career Achievement Award and Distinguished Service Award. Visit www.medicineatmichigan.org/MCAS/awards.asp for award criteria and nomination forms. Send completed nominations to:

Julie Antis
Assistant Director of Alumni Relations
U-M Office of Medical Development and Alumni Relations
301 E. Liberty, Suite 400
Ann Arbor, MI 48104-2251

Nominations must be postmarked by February 29, 2008. The MCAS Awards and Nominating Committee will review all nominations and recipients will be recognized during Reunion ’08.

In the next ISSUE of Medicine at Michigan: How does an embryo grow? The first 21 days … Pain, its origins and ways to treat and manage it, including alternative approaches … From trucker to surgeon: the incredible life of Jimmy Crudup. Also: Looking back on legendary neuroanatomist Elizabeth Crosby.
Determined to Make a Difference
Anand Parekh finds satisfaction in public service

Anand Parekh (M.D. 2002) likes to look at the big picture, whether treating a patient at the clinic where he volunteers, advising the Secretary of Health and Human Services on a public health policy issue, or mentoring medical students at Johns Hopkins, where he’s an adjunct faculty member.

The son of a family practitioner and a hospital administrator, Parekh grew up in West Bloomfield, Michigan, and, at 31, already has a formidable resume. After graduation from Detroit Country Day High School, he was accepted into the University of Michigan’s now-defunct Inteflex program, which guaranteed exceptional students a place in the U-M Medical School before they began their undergraduate studies.

Finding himself with an “extra year” after finishing his bachelor’s degree in political science in three years and with highest distinction, he spent it completing most of the work for a master’s degree from the U-M School of Public Health, which he finished — presumably in his spare time — while he was in medical school.

After his residency in internal medicine at Johns Hopkins, he joined the Office of Public Health and Science, a unit of the U.S. Department of Health and Human Services, as its senior medical adviser. Last August, he was appointed acting deputy assistant secretary of health and “operationally in charge,” as government-speak has it, of the OPHS.

“Where I’m trying to go and where I’ve always tried to go is governed by how I can make a difference in people’s lives,” says Parekh. “When I see patients on Saturday mornings, the focus is that patient and how I can make a positive difference in this person’s life. When I do policy work Monday to Friday, it’s not better or worse, it’s just different. Instead of seeing patients one-on-one and making that difference, it’s really taking a step back and looking at the broad population and seeing how with good science you can improve the health of an entire population.”

He has no idea how long his current gig will last. The previous assistant secretary, John Agwunobi, left to help Wal-Mart set up small clinics in its stores, and it’s unclear whether the President will submit a nominee to succeed him for Senate approval or fill the vacancy with an acting assistant to serve the remainder of the President’s term. It doesn’t make much difference to Parekh.

“I am a career appointee, not a political appointee,” he says. “Where I am right now — not in many ways, but in all ways — really allows me to do what I’ve always wanted, which is to try to make a difference on a broader level. My mentor here, William Raub, is the secretary’s science adviser. He’s been here [at HHS] for 35 years and had such a fulfilling career. I could see myself being here a long time, as long as I feel I’m able to make a difference.”

Parekh does his own share of mentoring, including serving as co-chair of alumni events for the week that Presidential Scholars — an elite group of about 140 high school seniors, one of whom he once was — spend in Washington.

“I want to make sure they understand that even though it’s great that they’re getting this award, there are thousands of other students who could have received it,” he says. “Much has been given to them, and they should remember to give back.”

—Jeff Mortimer
In 1904, Michigan’s Department of Eye, Ear, Nose and Throat was divided into the departments of Ophthalmology and Otolaryngology. Roy Bishop Canfield (M.D. 1899), then just 30 years old, was tapped to head the new Department of Otolaryngology and approached the challenge with the confidence and leadership for which he was known. In 1932, his sudden death shocked the Ann Arbor and U-M communities but the loss was felt perhaps most acutely by a young woman whose life he had saved nearly two decades before.

Bishop Canfield, as he was called, was born in Lake Forest, Illinois, in 1874, the son of a real estate dealer and his wife. In his last year of high school the family moved to Ann Arbor, and Canfield graduated with the Ann Arbor High School Class of 1893. He entered the University of Michigan that fall in the combined literary and medical course. He graduated with honors in 1897 and received his M.D. two years later.

After a brief appointment in the Department of Eye, Ear, Nose and Throat, Canfield left Ann Arbor to complete an externship at the Massachusetts Eye and Ear Infirmary in Boston, then traveled to study at the University of Fredrich Wilhelm in Berlin. After serving as an assistant surgeon at the Manhattan Eye, Ear and Throat Hospital and as an attending laryngologist at the New York City Clinic for Laryngeal Tuberculosis, Canfield returned to Ann Arbor to accept the post of clinical professor of diseases of the ear, nose and throat. Nearly 40 years later, at the first Roy Bishop Canfield Memorial Lecture, Charles S. Kennedy, M.D., who studied under Canfield, recalled him on the job:

“His operating room became a theater of coordination quite like the setting for a fine symphony orchestra. Each one knew his part to perfection (woe betide the one who did not) and the master directed the program to an extreme, meticulous in detail and rapid in accomplishment. Each operative procedure was carried out with a daintiness, a sureness and dispatch which caused Doctor Canfield to qualify for the four attributes of a great surgeon, so aptly described by his Chief, Dr. DeNancrede, as “The eye of an eagle, the courage of a lion, the hand of a lady and the heart of a dove.”

Canfield was the first to establish a training course for four years of post-graduate work in the Medical School, and young surgeons-to-be sought training with him. His renown as a surgeon grew; patients traveled great distances to be treated by him as he worked to improve the outcomes of ear/nose/throat surgical techniques, which were, at the time, crude at best. In 1907, Canfield married Leila Marchant Harlow, a direct descendant of William Thompson Harlow, a Mayflower Pilgrim. They settled into a large home at 1830 Washtenaw Avenue. In 1914, a baby with a severe ear infection was brought to Canfield in the hospital. The child was just 5 months old, a foundling, and if not treated soon, would die. Canfield took a chance and operated on the baby – never before having performed that particular mastoid surgery on someone so young. The baby survived but needed round-the-clock care, so Canfield took the baby home for Leila to tend. The couple fell in love with the infant, adopted her, and named her Barbara.

Canfield’s work and renown continued to grow. Called to Washington during World War I, Canfield was commissioned as the chief of the Ear, Nose and Throat Section of the base hospital at Camp Custer. When he returned to Ann Arbor after the war, he threw himself once again into his clinical practice, teaching and research. With Albert Furstenberg (M.D. 1915), who would one day become dean of the Medical School, he maintained a large surgical and consulting practice. Stories about Canfield presenting Henry Ford with a bill for $25,000 for the treatment of his son, Edsel, circulated in Ann Arbor for years afterward.

On May 12, 1932, just after 1 a.m., Canfield was returning home after a consultation in Detroit. Driving at a high rate of speed, as he was known to do, he passed a truck with a trailer a few miles east of Ann Arbor, left the road, and hit a tree. He died instantly.

Just three days before, Barbara Canfield, then 18, had set sail for England with the Furstenbergs, who were close friends of the family. Throughout the previous year, Barbara, a U-M freshman, had become closer than ever to her father. Furstenberg broke the news in stages: on the first day, he told Barbara her father had been in a bad auto accident. The second day, she was told that he was not expected to survive. By the time the ship docked and arrangements were made for an immediate trip home, Barbara Canfield knew that the adored father who had once saved her life was gone.
Two weeks later, David Murray Cowie, M.D., professor of pediatrics and infectious diseases, wrote of his friend and colleague: “His opinions were so clearly stated, so honestly given, and so sincere that one felt a sense of security when he was around. ... As one of his staff members has written, ‘To be associated with Dr. Canfield was to be inspired. He was a tireless worker, a brilliant thinker, never satisfied until perfection had been attained.’” Albert Furstenberg was named Canfield’s successor.

Barbara Canfield left Ann Arbor at 19 to marry Walter Holden, a Michigan graduate who had been one of her father’s patients during the last year of Canfield’s life; she met Holden accompanying her father on rounds one night. The couple settled in Highland Park, Illinois, had three children and a long and happy marriage.

From Canfield’s early work to advance his field through education, clinical care and applied research, the department he headed has grown in ways he doubtless would have found difficult to imagine. In October 2004, the Department of Otolaryngology celebrated two significant milestones: its centennial as a distinct department, and its 1000th cochlear implant. —Whitley Hill
Darrell A. Campbell Jr., M.D. (Residency 1978), is one of only two recipients of the 2007 Eisenberg Patient Safety and Quality Award for Individual Achievement, given by the National Quality Forum, a public-private organization which includes members from all health care sectors and The Joint Commission, the nation’s leading health care accreditation and quality organization. Campbell, who holds the Henry King Ransom Professorship in Surgery and serves as chief of staff and senior associate director of the Hospitals and Health Centers, has worked nationally to make surgery safer for patients, and leads a broad patient-safety and quality-improvement campaign at the U-M to make the Health System the safest medical center in America.

Susan Dorr Goold (M.D. 1987, Residency 1992), associate professor of internal medicine and one of the founders of the U-M Bioethics Program, has been named to the American Medical Association’s Council on Ethical and Judicial Affairs. Goold is the only trained bioethicist on the panel, which includes six leading physicians from various specialties and two physicians-in-training. Practicing doctors, clinical affairs leaders, accrediting bodies, state boards, the courts, media and the public all turn to the AMA Code of Medical Ethics for guidance. The council maintains and updates the code, which dates back 160 years.

Daniel F. Hayes, M.D., professor of internal medicine and clinical director of the Breast Oncology Program, was recently named the first recipient of the annual Gianni Bonadonna Breast Cancer Award by the American Society of Clinical Oncology and the ASCO Foundation. The award recognizes Hayes’ clinical and laboratory work which has advanced the management of breast cancer worldwide.

Timothy R.B. Johnson, M.D. (Residency 1979), Bates Professor of the Diseases of Women and Children and professor and chair of obstetrics and gynecology, has been admitted as a fellow

TWO SELECTED AS HOWARD HUGHES MEDICAL INSTITUTE INVESTIGATORS

Two U-M researchers are among the 15 top physician-scientists nationally who were appointed Howard Hughes Medical Institute investigators in October, one of the highest honors a medical scientist can receive.

Arul Chinnaiyan (M.D. and Ph.D. 1999), the S.P. Hicks Collegiate Professor of Pathology, professor of urology and director of the Michigan Center for Translational Pathology, researches the genes, proteins and other markers on cells to develop new diagnostic tests, screening tools and targeted treatments for cancer and other diseases. Chinnaiyan’s team has shown that fusion of genes actually causes prostate cancer to develop. The center brings together experts in genomics, proteomics and bioinformatics to examine common patterns and potential targets in cancer and other diseases.

Friedhelm Hildebrandt, M.D., the Frederick G.L. Huetwell Professor for the Cure and Prevention of Birth Defects and professor of pediatrics and of human genetics, is an internationally known expert in the genetic basis of severe kidney diseases that cause early renal failure in infants and children. His discoveries have led to new insights into the common roots of congenital kidney, eye and other diseases. In 2003, his lab discovered that common to these diseases is a defect in the function of cilia, structures cells use for communication with the outside (see “Secrets of the Cilia,” page 20). His goal is to discover all the principal genes involved in the diseases he studies to develop effective screening tests and treatments.

Through its flagship investigator program, the prestigious Howard Hughes Medical Institute has joined with more than 60 distinguished U.S. universities, hospitals, institutes and medical schools to provide long-term support for Hughes investigators and their research teams.
INSTITUTE OF MEDICINE INDUCTS DEPARTMENT CHAIR

Theodore Lawrence, M.D., Ph.D., the Isadore Lampe Collegiate Professor and chair of the Department of Radiation Oncology, is among 65 new members nationwide elected to the prestigious Institute of Medicine.

Lawrence joined the Medical School faculty in 1987. He and his research team have developed combined treatments of intensified chemotherapy and radiation that have extended survival for pancreatic cancer patients. Lawrence and others also have developed a treatment that delivers chemotherapy drugs directly to the liver and pinpoints radiation on tumors while sparing vital liver tissue. With colleagues at the Comprehensive Cancer Center, Lawrence pioneered a type of MRI called a functional diffusion map that helps physicians determine early on if treatment is working for patients with brain tumors.

Established in 1970 by the National Academy of Sciences, the institute is a national resource for independent, scientifically informed analysis and recommendation on human health issues. Total membership now stands at 1,692.

ad eundem of the Royal College of Obstetricians and Gynaecologists in London. Johnson was also made an Honorary Fellow of the Ghana College of Physicians and Surgeons and presented a lecture entitled “The Road to Achieving Excellence in Maternal Fetal Medicine” at the college’s Annual Scientific Meeting in Accra, Ghana. Johnson also assumed the editorship of the International Journal of Gynecology and Obstetrics in February. The September issue, his first as editor, was a special edition titled “Women’s Health and Safe Motherhood: Celebrating the Twentieth Anniversary of the Safe Motherhood Initiative.”

Anna Lok, M.D., professor of internal medicine, has been selected to receive the Hepatitis B Foundation’s 2008 Distinguished Scientist Award. The award is the highest scientific honor conferred by the foundation, and recognizes Lok’s outstanding contributions to the science and medicine of hepatitis B, as well as her advocacy for hepatitis B research and care.

Howard Markel (M.D. 1986), Ph.D., was elected to the American Clinical and Climatological Association, one of the oldest and most prestigious medical societies in the nation. Founded in 1884 by a group of physicians and scientists to improve medical education, research and practice, its initial focus was tuberculosis and its treatment by residence in a suitable climate; over time, the association expanded its field of interest to all aspects of medicine. Members are selected on the basis of leadership and excellence in their chosen field. Markel is the George E. Wantz Professor of the History of Medicine, director of the Center for the History of Medicine, and a professor of pediatrics and communicable diseases and of psychiatry.

The American Academy of Physical Medicine and Rehabilitation has awarded the Michigan Spinal Stenosis Study Team the Education Research Fund Best Paper Award, the highest research

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Marilynn Rosenthal (Ph.D. 1976), adjunct professor of internal medicine and associate director of the Medical School’s Society and Medicine Program for more than a decade, died August 9, 2007, of cancer at the age of 77. She also served as director of the Health Policy Studies program at the U-M-Dearborn.

Rosenthal’s primary research interests focused on comparative health care systems, physician self-regulation, and medical malpractice. She coordinated the Forum on Health Policy since 1994 and was part of the Medical School liberal arts program for premedical students. She had been a visiting scholar, fellow or professor at universities such as Columbia, Dartmouth, Oxford and Harvard.

Rosenthal created the Josh Rosenthal Lecture Series in memory of her son who died in the September 11, 2001, attack on the World Trade Center. After her son’s death, Rosenthal turned her research toward terrorism and, at the time of her own death, was nearly finished with a book about the terror attack.
award in the field, for the best research in physical medicine and rehabilitation this year. The team also received the best paper award from the Association of Academic Physiatrists this year, and has compiled more than a dozen other research awards. Members of the team include Anthony Chiodo, M.D. (Residency 1987), Michael Geisser, Ph.D., Andrew Haig, M.D., Jennifer Miner, Douglas Quint, M.D. (Residency 1986), Karen Yamakawa, John Yarjanian, M.D. (Fellowship 2004), and the late Julian Hoff, M.D.

Don Nease Jr., M.D., associate professor in the Department of Family Medicine, is serving a two-year term as president of the American Balint Society. The society is a collaboration of clinician-teachers who promote the use of intellect, emotion and self-reflection in the doctor-patient relationship, as well as its therapeutic potential. Nease also is serving a two-year term as vice president of the International Balint Federation.

Erika Newman, M.D., house officer in the Department of Surgery, was chosen by the Association of Women Surgeons to receive the 2007 Outstanding Woman Resident Award in recognition of a remarkable career in training as well as outstanding potential to contribute to the profession in the coming years.

The Michigan Academy of Family Physicians selected Eric Skye, M.D., to receive the Family Medicine Educator of the Year Award, presented annually to the family physician who has excelled in medical education and contributed to the continuing health of Michigan citizens. Skye is an assistant professor of family medicine and director of the Family Medicine Residency Program, and also teaches in the Family Centered Experience, a program which pairs first- and second-year medical students with patients to learn how family, environment, culture and lifestyle play a part in an individual’s health.

IN THE LIMELIGHT

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in the Department of Physical Medicine and Rehabilitation, is among 48 senior women faculty nationwide selected for the 2007-08 class of the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women. ELAM is the only national program dedicated to preparing senior women faculty for leadership at academic health centers.

Assistant Professor of Molecular and Integrative Physiology Xian-Zhong Shawn Xu, Ph.D., has been named the University of Michigan’s only Pew Scholar for 2007. Xu and 19 other exceptional researchers were selected as 2007 Pew Scholars in the Biomedical Sciences. The program, funded by Pew through a grant to the University of California, San Francisco, invests in early- to mid-career scientists; each scientist receives support for his or her research over a period of four years and gains inclusion into a unique community of scientists that encourages collaboration and exchange of ideas.

The following faculty members were recently appointed or reappointed, for five-year terms, to endowed professorships within the Medical School: David A. Bloom, M.D., the Jack Lapides Professor of Urology; Darrell A. Campbell Jr., M.D. (Residency 1978), the Henry King Ransom Professor of Surgery; Gerard M. Doherty, M.D., the Norman Thompson, M.D., Professor of Surgery; Sid Gilman, M.D., the William J. Herdman Professor of Neurology; John F. Greden, M.D., the Rachel Upjohn Professor of Psychiatry and Clinical Neurosciences; Steven L. Kunkel, Ph.D., the Pathology Research Endowed Professor; Howard M. Sandler, M.D., the Newman Family Professor of Radiation Oncology; Thomas W. Wakefield, M.D. (Residency 1984; Fellowship 1986), the S. Martin

IN PRINT

Books and journals written or edited by Medical School faculty


By M. Catherine Spires, M.D. (Residency 1992), associate professor of physical medicine and rehabilitation and associate chair of clinical affairs at the University of Michigan, the William J. Herdman Professor of Neurology; John F. Greden, M.D., the Rachel Upjohn Professor of Psychiatry and Clinical Neurosciences; Steven L. Kunkel, Ph.D., the Pathology Research Endowed Professor; Howard M. Sandler, M.D., the Newman Family Professor of Radiation Oncology; Thomas W. Wakefield, M.D. (Residency 1984; Fellowship 1986), the S. Martin
Lindenauer Collegiate Professor of Vascular Surgery; Jeffrey S. Warren, M.D. (Residency 1988), the Aldred Scott Warthin Professor of Pathology.

**BEST DOCS: MANY ARE AT THE U-M**

The new national list of the Best Doctors in America included 370 U-M physicians, up from 294 who were named in the last listing two years ago. This recognition puts these physicians among the top 3 to 5 percent of American doctors in their specialties. U-M physicians were recognized in nearly every medical specialty category, reflecting the broad scope of adult and pediatric care provided at the Health System.


Edited by Kenneth Silk, M.D., professor of psychiatry; Kate Davidson, Ph.D.; and Roger Mulder: Personality and Mental Health: Multi-disciplinary Studies from Personality Dysfunction to Criminal Behaviour, volume 1, number 1. John Wiley & Sons Ltd., 2007.

**Corrections**

The summer issue, on page 32, incorrectly identified the relationship between benefactor Patricia E. Schemm and Ferdinand Ripley Schemm; Ferdinand was Patricia’s brother-in-law. On page 35, we titled alumnus Joel Young as both psychiatrist and neurologist; he is, in fact, a psychiatrist with added qualifications in geriatric and forensic psychiatry and a diplomate of the American Board of Psychiatry and Neurology. Finally, on page 41, faculty member William F. Chandler, M.D., is a professor of internal medicine and neurosurgery—not neurology. Our apologies to all.
We often speak of the three components of our mission as an academic medical center — those of providing the best possible medical education for our students, care for our patients, and research that contributes to the advancement of medicine and human well-being. There is a fourth component as well, quietly fulfilled but brought to light in this issue of Medicine at Michigan: service to our community.

The inspiring programs described in our cover story are a few of the many we undertake, in collaboration with the community itself, to fulfill our mission of community service. All of these efforts result in the same benefit to individuals and families in our local community: health care that is otherwise unavailable, unaffordable or inaccessible.

One of these initiatives, the Washtenaw Community Health Organization, is a highly successful collaboration between Washtenaw County and the Health System undertaken with the goal of integrating physical care and behavioral care for Medicaid participants, as well as residents with mental, developmental and substance abuse needs regardless of their ability to pay. All too often, mental and physical health care for these residents is uncoordinated and incomplete, compromising quality of care and their overall health status.

Serving approximately 4,000 Washtenaw County residents each year, the WCHO has been recognized as a model program whose best practices are being sought by community health agencies in Michigan and nation-wide. Additionally, Lenawee, Livingston and Monroe counties have affiliated with the WCHO to form the Community Mental Health Partnership of Southeastern Michigan, extending our community reach and expanding our fundamental commitment to improve overall health status and increase access to care for all.

These programs and partnerships, and so many others throughout the Health System, represent steps toward realizing our mission of community service and making a very real difference in the lives around us. We undertake them with the same dedication we bring to training physicians, caring for patients and researching medical potential, each of those efforts helping pave the way to a healthier tomorrow for everyone.

Sincerely,

U-M Executive Vice President for Medical Affairs
CEO, U-M Health System
Lifting the Burden … 
Realizing the Dream

Take the Challenge!

To show her profound commitment to professional and graduate student support, U-M President Mary Sue Coleman recently committed $20 million from President’s Office discretionary funds to provide a 1-to-2 match for scholarship gifts made between September 1, 2007, and December 31, 2008 (or until the matching funds are committed).

The President’s Challenge offers a unique opportunity to maximize the impact of your scholarship gift: Every $2 pledged will be matched by $1 from the President’s Office. Gifts of any amount are eligible for the match.

To learn more about these limited-time giving opportunities, or to make a gift in support of medical students at Michigan, contact B.J. Bess at (734) 998-6044 or bjbess@umich.edu.

“I want our medical students to focus on their studies, not their finances. Scholarships make that possible.”
Mary Sue Coleman, Ph.D.
President, University of Michigan

“Scholarships allow our talented and hard-working students to make the most of their Michigan medical education.”
James Woolliscroft, M.D.
Dean, University of Michigan Medical School
Office of Medical Development and Alumni Relations
301 East Liberty Street, Suite 400
Ann Arbor, MI 48104-2251

Executive Officers of the U-M Health System:
Robert P. Kelch, CEO and U-M Executive Vice President for Medical Affairs; James O. Woolliscroft, Dean, U-M Medical School; Douglas Strong, Chief Executive Officer, U-M Hospitals and Health Centers

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2007 Medical Center Alumni Society
Distinguished Achievement and Service Awardees

DISTINGUISHED ACHIEVEMENT AWARD

Walter C. Willett (M.D 1970), Ph.D.
Chair, Department of Nutrition
Professor of Epidemiology and Nutrition
Harvard School of Public Health
Professor of Medicine
Harvard Medical School

DISTINGUISHED SERVICE AWARD

Neal A. Vanselow (M.D. 1958, Residency 1963)
Chancellor Emeritus
Professor Emeritus of Medicine
Tulane Health Sciences Center

For more information about MCAS awardees, visit:
www.medicineatmichigan.org/MCAS/award_recipients.asp