AIDS Activist And Tony Award-Winning Actress Nell Carter was in St. Louis in November to address the issue of raising AIDS awareness among African Americans. Since Carter's brother died of AIDS in the early 1990s, she has become an advocate for HIV/AIDS, speaking out about the importance of medicines and services available today. Carter, who is known for her roles on Broadway and television, also visited the Helena Hatch Special Care Center for Women at the School of Medicine. The center, which provides care for women with HIV and AIDS, helped organize the AIDS awareness event. Carter is holding Isaiah Scott, who along with his mother, Felicia, is enrolled in care at the center.
THE COVER

The cover image shows a human breast tumor specimen that has been stained with an antibody to mammaglobin — a tumor marker recently discovered by School of Medicine researchers. The red-orange color shows the antibody reacting with the mammaglobin protein present in the breast cancer cells. For more information on the discovery and what it may one day mean to breast cancer diagnosis and treatment, turn to page 16.

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Peck Elected To Institute Of Medicine

WILLIAM A. Peck, MD, executive vice chancellor for medical affairs and dean of the School of Medicine, has been elected to the Institute of Medicine.

A component of the National Academy of Sciences, the Institute advances and disseminates scientific knowledge to improve human health, providing information and advice to the government, corporations, professional groups and the public.

Members are chosen for their major contributions to health and medicine or related fields, and they devote a significant amount of volunteer time to committees engaged in health policy studies.

Peck is an internationally recognized expert on bone metabolism and disorders. He developed the first method for directly studying the structure, function and growth of bone cells, discovered key mechanisms by which certain hormones regulate bone cell function, and investigated the causes of osteoporosis.

Shapiro Named Division Director

STEVEN D. Shapiro, MD, associate professor of medicine and of cell biology and physiology, has been named director of the division of pediatric allergy and pulmonary medicine.

Shapiro, also medical director of the respiratory therapy department at Barnes-Jewish Hospital, has done extensive research with genetically modified mice to examine lung response during development and to injury and inflammation. He and his colleagues recently found an enzyme that is crucial to the onset of emphysema, and, partly based on this research, pharmaceutical companies are developing drugs that may prevent emphysema.

A member of Alpha Omega Alpha, the national honorary medical society, Shapiro won the American Lung Association's Edward Livingston Trudeau Scholar Award from 1990 to 1993. From the same association, he received a Career Investigator Award from 1994 to 1997.

He serves as deputy editor of the *Journal of Respiratory Cell and Molecular Biology* and is a member of the American Society of Clinical Investigation.

Raichle Receives American Philosophical Society Award

MARCUS E. Raichle, MD, has received the 1998 Karl Spencer Lashley Award from the American Philosophical Society. Raichle shared the award with colleague Michael I. Posner, PhD, a former Washington University faculty member now at the University of Oregon, for their contributions to brain imaging.

The American Philosophical Society, the oldest learned society in the United States, was established by Benjamin Franklin in 1743 to promote scholarly and scientific inquiry. Elected members have included John J. Audubon, Robert Frost and Charles Darwin, and more than 200 Nobel Prize winners have been members since 1901.

Raichle, co-director of the division of radiological sciences and professor of radiology, neurology and neurobiology, and Posner, professor of psychology, are being recognized for pioneering the use of noninvasive imaging to understand brain function. They are co-authors of a *Scientific American* volume about this topic called *Images of Mind*, which received the 1996 William James Book Award from the American Psychological Association.

A member of the National Academy of Sciences, Raichle and his colleagues pioneered the use of positron emission tomography (PET) imaging to map specific brain areas used in tasks such as seeing, hearing, speaking and remembering. Posner added his skills as one of the world's leading cognitive psychologists to the work when he joined this effort in 1985. PET itself was developed at Washington University during the 1970s to allow researchers to noninvasively study the living human brain and to track and record its function.
Grubb Assumes Leadership of Neurosurgical Associations

ROBERT L. Grubb Jr., MD, the Herbert Lourie Professor of Neurological Surgery and professor of radiology, has become the 40th chairman of the American Board of Neurological Surgery. He will serve a one-year term.

Established in 1940, the board certifies neurological surgeons by reviewing applicants' educational training and practice qualifications and giving written and oral exams. It also strives to improve training opportunities and standards in neurological residency programs throughout the United States. Grubb has served as a board member for six years.

Grubb also has been elected 49th president of the Southern Neurosurgical Society. He will serve for one year.

Foley Wins Medical Scholarship

THIRD-year medical student Kristin M. Foley has received a one-time scholarship from the Southern Medical Association.

Each year the SMA, which is based in Birmingham AL, awards one-time tuition scholarships to third-year medical students who have been recommended by their deans. Foley, who is from Columbus OH, graduated first in her high school class of 658. She received her undergraduate degree magna cum laude in American Studies from Yale University in 1991.

After graduation, she worked for a management consulting firm, Orion Consultants, in New York City. The firm conducts market research and executive searches for major Wall Street brokerage firms. She then worked for the National Network of Runaway and Youth Services in Washington DC, a national nonprofit organization whose members are runaway shelters and other community-based programs for at-risk youth. There, she volunteered at an outpatient AIDS clinic at the University of Maryland and spent a summer working in the lab of the clinic's attending physician doing molecular biology research.

Of the SMA scholarship Foley says, "I am extremely honored to have been selected by the Southern Medical Association for this scholarship. I have so many very talented and bright classmates that it comes as something of a (very pleasant) surprise to have been singled out for this distinction."

Evens Presides Over American College of Radiology

RONALD G. Evens, MD, Elizabeth Mallinckrodt Professor and head of Mallinckrodt Institute of Radiology, is the new president of the American College of Radiology (ACR).

Prior to being named president, Evens served as chairman of the Board of Chancellors for the ACR, a major national medical association with more than 31,000 members. The association is dedicated to advancing the science of radiology, improving radiological services to patients and promoting the enhancement of medical training for radiologists and other health professionals.

Evens also serves as radiologist-in-chief at Barnes-Jewish and St. Louis Children's hospitals and as an adjunct professor of medical economics at Washington University. He is internationally known for his expertise in diagnostic radiology and has been past-president of the American Roentgen Ray Society, the Association of University Radiologists and the Missouri Radiological Society.
Waterston Receives $26 Million For Genome Sequencing

Robert H. Waterston, MD, PhD, the James S. McDonnell Professor and head of genetics, has received a one-year $26.8 million grant from the National Human Genome Research Institute. The grant will enable the Genome Sequencing Center, which Waterston directs, to forge ahead with sequencing human DNA. “We are in a unique situation at this time,” Waterston says, “because the human species is reading its own blueprint.”

This blueprint, housed in almost every cell, is written in code — four types of building blocks called bases. There are 3 billion bases in the human genome — all of our chromosomal DNA — and collaborators around the world are working out their sequence. This sequence can reveal the locations and identities of genes and other genetic features.

Only 6 percent of the genome has been sequenced to date, but the project is having profound effects on medical research. It is cutting down the time and cost of hunting down disease genes and is leading to new diagnostic tests. The National Human Genome Research Institute awarded Waterston a three-year $24 million grant in 1996 to begin human DNA sequencing.

Since 1996, the researchers have sequenced about 43 million bases as well as working on genomes of several other species. By September 1999, they aim to assemble at least another 100 million bases from the human genome, 60 million of which will be completely finished. All data will go immediately onto the World Wide Web for use by other researchers.

Editor’s Note: Human Genome Project researchers at the School of Medicine and the Sanger Centre in Cambridge, England, announced in mid-December that they had completed genetic sequencing of the roundworm C. elegans.

Joint Program Establishes New Professorships

Four named professorships supported by a $6 million dedicated endowment have been established as part of a new joint program between St. Louis Children’s Hospital and the School of Medicine.

The goals of the program are to solidify an already strong relationship between the medical school and hospital and through a combined effort establish 12 new pediatric professorships at the Medical Center by the year 2008.

The four recipients are: F. Sessions Cole, MD, the Park J. White, MD, Professor of Pediatrics; James P. Keating, MD, the W. McKim O. Marriott, MD, St. Louis Children’s Hospital Professor of Pediatrics; Jeffrey L. Marsh, MD, the Appoline Blair St. Louis Children’s Hospital Professor of Surgery; and Arnold W. Strauss, MD, the Alumni Professor of Pediatrics.

A Volunteer For Health

Miss America 1999 Nicole Johnson is interviewed by Channel 4 health reporter Al Wiman at the launching of the School of Medicine’s Volunteer for Health program in November. Volunteer for Health connects people who want to volunteer as research subjects with medical school researchers conducting clinical studies. Johnson, who was diagnosed with juvenile diabetes five years ago, says that as Miss America she hopes to make the detection, prevention and cure of diabetes a national priority. Increasing the number of participants in clinical trials nationwide is one way this can be accomplished.
1998 Nobelist Has A School Of Medicine Connection

ROBERT F. FURCHGOTT, PhD, one of three scientists to receive the 1998 Nobel Prize in Physiology or Medicine, conducted some of his early research at the School of Medicine more than 40 years ago.

Furchgott, a pharmacologist at the State University of New York, and two other Americans, Ferid Murad, MD, and Louis J. Ignarro, PhD, received the prize in October for their work concerning nitric oxide as a signaling molecule in the cardiovascular system. Formal presentation of the awards took place on Dec. 10 in Stockholm, Sweden.

Furchgott came to the School of Medicine in 1949 to work in the laboratory of world-renowned researcher Oliver H. Lowry, MD, PhD, who was professor and head of the Department of Pharmacology. Furchgott had previously been an assistant professor of biochemistry at Cornell University. He joined the pharmacology department here as an assistant professor and was one of six faculty members in the 1950s. He was promoted to associate professor in 1952. He studied the effects of drugs on heart rate and rhythm, and, in particular, the action of drugs on the smooth muscle of blood vessels.

Furchgott left the School of Medicine in 1956 to become chairman and professor of the newly established Department of Pharmacology at the State University of New York. Until that time, pharmacology had been a division of the Department of Physiology at SUNY. Furchgott expanded the department's teaching staff and developed its research initiative, in addition to continuing his research on the biochemistry and pharmacology of the heart and blood vessels.

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Hunter describes Furchgott as sensitive, soft-spoken and thoughtful. He says Furchgott has returned to St. Louis a number of times through the years. One of his last visits was in 1996 to attend the memorial service for Oliver Lowry.

A Dizzying Array of Advancements

The latest advancements in DNA sequencing and automation were displayed at the Fifth International Conference on Automation in Mapping and DNA Sequencing, sponsored by the School of Medicine's Genome Sequencing Center. Some 280 leaders in human genome research, representing more than a dozen countries, attended the four-day event in early October at the Eric P. Newman Education Center. Among the countries represented were the United Kingdom, Japan, France, China, Germany, Switzerland, Hungary, Brazil, Australia, Canada and Norway. In addition to scientific sessions, the conference featured 90 exhibitors including those from Amersham/Pharmacia Biotech, Molecular Dynamics, MJ Research, Robbins Scientific, Perkin Elmer/ABI and Sigma-Aldrich Research, who displayed and discussed the latest technologies in DNA sequencing and automation. Keynote speaker for the event was James D. Watson, PhD, president of Cold Spring Harbor Laboratory and co-discoverer of the genetic code.
Mind-Body Connection: Reversing Depression In Diabetic Patients

Investigators here have found that a form of psychotherapy called cognitive behavior therapy (CBT) effectively treats depression in patients with diabetes, restoring mental health and significantly improving control of blood sugar levels.

The researchers report their findings in the Oct. 15, 1998 issue of *Annals of Internal Medicine.* They found that a 10-week program of therapy helped relieve depression in the majority of patients with diabetes. In the months after CBT, these patients also achieved better control of their blood glucose levels.

Clinical depression affects between 15 percent and 20 percent of patients with diabetes, says Patrick J. Lustman, PhD, principal investigator and associate professor of psychiatry. Untreated depression is closely associated with poor glucose control. It also is linked to poor compliance with diabetes treatment and higher rates of heart and eye complications.

All study subjects had both clinical depression and diabetes and received 10 weeks of education about diet, exercise and compliance with treatment. Half also received CBT.

After 10 weeks, depression was in remission for 17 of the 20 patients in the CBT group. In the group that received only diabetes education, six of the 22 patients went into remission.

Six months later, 14 of the 20 CBT-treated patients were still in remission, while seven of 21 patients in the control group were not depressed.

And while glucose control was similar in the two groups at the end of the study, glucose levels were significantly better in the CBT-treated patients when they were examined again six months after treatment.

The findings are welcome news for researchers looking at connections between the mind and body. A number of studies suggest that depression has negative effects on diabetes and many other physical illnesses. This study is one of the few to show that the negative effects may be reversible and that treating depression may have beneficial effects on other aspects of diabetes.

Researchers Identify The First Diabetes Gene

Reporting in the Oct. 1 issue of the journal *Nature Genetics,* investigators here say they have identified the first gene known to cause a form of insulin-dependent diabetes in children.

Studying blood samples from six families affected by the disorder, the investigators found that mutations in a gene on chromosome 4 cause a disorder called Wolfram Syndrome. The disorder is characterized by insulin-dependent diabetes and vision problems, with eventual blindness. Some people with Wolfram Syndrome also lose their hearing.

The disorder is caused by mutations in a single gene called WFS1. Investigators are particularly excited about how identification of the gene might advance the understanding and treatment of the more common forms of diabetes, which affect more than 20 million people in the United States.

Wolfram Syndrome is a rare form of insulin-dependent diabetes that strikes children at about age 6, says senior investigator M. Alan Permutt, MD, professor of medicine. By age 8 or 10, the children also develop visual impairment and subsequently go blind. Most die in their 30s.

The researchers obtained much of the genetic material from three large families living in Japan. The families, which had been described in the Japanese scientific literature, were inbred and had multiple children with Wolfram Syndrome.

The paper’s lead author, Hiroshi Inoue, MD, is a professor of internal medicine at Yamaguchi University School of Medicine in Japan. His colleague, Yukio Tanazawa, MD, arranged for physicians in Japan to travel to the areas where the families lived, draw blood samples and send those samples to St. Louis for DNA analysis. Five years later, those samples and others from families in the United States, Australia and Saudi Arabia helped Inoue and the team isolate the gene WFS1.

Permutt intends to create an animal model of Wolfram Syndrome. Because the gene also is found in mice, the researchers will try to eliminate or mutate it to study how loss of the protein affects islets and neurons. The animal model may be useful for testing new therapies as well.
Bedside Test Can Detect Dangerous Blood Clots

A new bedside blood test can accurately detect or rule out the presence of dangerous blood clots in critically ill patients, according to investigators at the School of Medicine and Barnes-Jewish Hospital.

The test, called the SRDD (Simpli RED D-dimer) assay, measures blood levels of a substance called D-dimer, a byproduct of blood clots. High levels of D-dimer indicate the presence of a clot.

Using the test in an intensive care unit, Marin N. Kollef, MD, identified the presence of most clots and ruled out the diagnosis in up to 20 percent of patients with suspected clots.

Kollef, an associate professor of medicine, directs the medical intensive care unit at BJH, one of several centers where the blood test is being studied.

Shifty Eyes, Shifting Attention

If you've ever tried to sneak a peek at someone without them knowing, you may be surprised to learn that the parts of the brain that control eye movements are the same as those that shift attention.

Unlike a camera, which records everything it sees, the brain can focus on one part of an image, as when you look into someone's eyes and ignore their other facial features. Scientists call this "visual attention."

Maurizio Corbetta, MD, assistant professor of neurology, radiology and neurobiology, determined which parts of the brain became active when subjects fixed their gaze on a particular spot but paid attention to their peripheral field of vision. His group also imaged the brain while the subjects moved their eyes across their field of view. Therefore researchers were able to directly compare attention shifts with eye movements.

They used functional magnetic resonance imaging to obtain the images. Six volunteers viewed a row of boxes on a computer screen. In the "shifting attention" task, they fixed their gaze on the center of the display while shifting their attention to each of the boxes left of center to detect a visual stimulus — a star — in a box. In the "eye movement" task, the subjects moved their eyes sequentially from one box to another, center to left, to detect the star.

The images revealed which parts of the brain were active during each task. To get a better view, the researchers superimposed the data on flattened maps of the brain. These 2-D maps show regions of the brain that normally are hidden in folds of tissue.

The D-dimer test can be performed at the bedside. A drop or two of blood is drawn and tested, and within 3 minutes the test gives doctors a reading to determine whether the patient has significant levels of D-dimer in the blood.

Past research from Kollef and colleagues has shown that high levels of D-dimer are associated with poor patient outcomes. In another study, they found that high levels of D-dimer were associated with greater frequency of organ failure, severe sepsis or septic shock and death.

Kollef believes the D-dimer test has the potential to change some of those poor outcomes. Because it rapidly makes physicians aware of blood clots, immediate interventions can be administered to break up clots and preserve organ function. The test also helps physicians avoid those therapies when a test is negative.
Troubled Tots
By Holly Edmiston

Researchers Work To Improve Diagnosis And Treatment Of Serious Mental Disorders In Preschoolers

Ashley was 10 months old when she suddenly stopped eating. Brian had been expelled from two preschools for disruptive behavior by the time he reached age 4. Justin, 3, avoids making eye contact and has little social interaction with others.

Early childhood, a time of delight for most families, can be emotionally wrenching for those whose children experience mental illness. For some, the formative years are filled with the disturbing beginnings of what may become a chronic problem.

Working to lessen the fear and stigma felt by families that face these challenges is Joan Luby, MD, assistant professor of psychiatry in the division of child psychiatry. Luby, one of a handful of preschool psychiatrists across the nation, combines clinical observation with basic research to develop guidelines for the early diagnosis and treatment of mental illness in very young children.

Clinical Findings

Cases like those above — diagnosed as infantile anorexia, attention deficit hyperactivity disorder and autism — are representative of some of the patients seen at the Washington University infant/preschool clinic, a mental health facility for children age 5 and under. Luby established the clinic in 1990. It is one of about 30 such facilities in the country and one of two in St. Louis. The clinic and ongoing research projects, conducted by Luby and her staff, together compose the Washington University Early Emotional Development Program.

Luby, founder and director of the program, met with resistance from psychiatric colleagues when she first began seeing preschool patients. Many questioned whether such young children could even have mental disorders.

"I think it's generally true that even many child psychiatrists are not comfortable treating children under the age of 5," she says. "It's inherently difficult for most people to conceptualize such young children having mental disorders."

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Despite initial skepticism, Luby was inundated with referrals when the clinic opened its doors. Presently, about 200 children visit the clinic each year.

Early childhood can be a tumultuous time. Every parent knows that lurking within their adorable tot is an independent little person who can be whiny, cranky or throw a tantrum of incredible power — often in an instant and without warning.

Most of these behaviors are transient, lasting only a few months. But parents need help when a behavior is more than “just a phase” and continues to worsen over time.

Luby says parents know when a problem is serious. By the time they bring their child to the clinic, the behavior has usually been going on for some time and the child's pediatrician generally has been unable to determine any medical cause for the disturbance.

“These parents have tried the home-based parenting interventions that we all use to help our kids through difficult periods,” says Luby. “It is the persistence of the symptoms, the degree of impairment the child suffers and the level of distress felt by the family that sets a serious mental disorder apart from a simple, more transient behavioral problem.”

According to Luby, there is no question that mental disorders exist in the preschool age group. She says a better question to ask is: “What do disorders in the preschool period look like and how can we intervene early?”

Studying such young patients presents a special challenge to researchers. Preschool children do not have sufficient verbal skills to adequately describe their mental states or feelings, says Luby. For that reason, psychiatrists cannot conduct straightforward question-and-answer interviews with them.

Luby has incorporated a number of alternate methods of gaining information into the program. She evaluates children over an extended period of time to observe them in different contexts, videotaping them at play and interacting with their primary caretakers.

By playing with the child, the researcher or clinician can gain information directly from the child, rather than relying on the parent. Parent informants are valuable, Luby explains, but they cannot always report validly on all aspects of their child's behavior, such as when the child is not with them, or is experiencing internalizing symptoms, such as depression or anxiety, that are not outwardly obvious.

Impairment — a child's inability to meet developmental challenges — also can be significant. Amy Heffelfinger, PhD, a neuropsychologist in postdoctoral training who works with Luby, conducts assessments on clinic patients to determine any areas in which a child may need help.

Many children suffering from mental disorders have difficulty with learning, memory, and planning and problem-solving abilities, says Heffelfinger. Noting problems early is critical to...
ensure a child is provided the necessary special services, such as speech, physical or occupational therapy, as early as possible.

Though parents may know in their hearts that something is wrong with their child, it is from the clinic that they often get their first official diagnosis of mental illness or developmental disorder. If children are diagnosed early, parents can be taught a variety of ways in which to work with them, such as doing exercises at home that increase motor skills or stimulate thinking and speech.

"Much can be done in the early years," says Heffelfinger. "Parents and educators don't yet fully recognize how important it is that a child who has special needs get help in the first couple years of life," she says. "We are here to help people get over the stigma that exists."

Besides helping patients and their families, the clinic has become an important educational tool for the university.

"The infant/preschool clinic was begun by Joan to address an area she saw as a glaring clinical need," says Charles E Zorumski, MD, Samuel B. Guze Professor and head of the Department of Psychiatry. "In the eight years of its existence, the clinic has grown from a fledgling operation into an important clinical service and training vehicle for our residents and fellows."

The clinic has become an integral component of the university's child psychiatry training program, with fellows completing a four-month rotation through the clinic during their second year of subspecialty training. Third-year medical students regularly observe at the clinic, and the program recently became part of the practicum for the university's George Warren Brown School of Social Work.

**Defining Depression**

Luby recently was awarded two grants — a five-year $737,000 grant from the National Institutes of Health (NIH) and a one-year $37,000 grant from the John D. and Catherine T. MacArthur Foundation Network on Development and Psychopathology. Data collection made possible by the MacArthur grant, which tested the reliability of a puppet interview, recently was completed. The NIH grant will provide funds to study emotional development and its relationship to depressive disorders in preschool children.

Luby and colleagues will explore the question of whether 3- to 6-year-old children can actually experience depression. Though some psychiatrists argue that young children cannot have the disorder, Luby believes it does exist in this age group, but that it manifests itself differently than in adults.

Young children may suffer from adult symptoms of depression, such as sleep disturbances and lack of energy and appetite, but they also often exhibit developmental regression, play that is focused on negative or pessimistic themes, tantrums and other symptoms that would appear to be more specific to young children, says Luby.

"We know that depression in older children and adults is multifactorial — there are known biological concomitants — but there are also psychosocial factors," says Luby. "I believe that the same is likely to be true of preschool children."

Biological criteria, such as measuring levels of stress hormones in saliva and looking at genetic history, are an important part of the depression study, which will include children from the Washington University infant/preschool clinic and from four other mental health clinics in the St. Louis area.

Researchers will examine each child's environment and his or her relationship with a primary caretaker. Objective measures will
be used to determine the child's emotional reactivity.

The study also involves a puppet interview, which allows the child to endorse the feelings closest to his or her own when expressed by "talking" puppets. Evidence suggests that children can give researchers important information about their feelings using this method. Researchers also will rely heavily on observational measures, such as videotaping a child doing various tasks or responding to different types of stimuli.

Another important and innovative component of the preschool depression study is a newly developed measure of emotional development. This measure, which assesses the young child's ability to recognize and label emotions from facial expression, was developed by Christine Mrakotsky, MA, a predoctoral student from the University of Vienna, who is completing her doctoral dissertation in Luby's lab. Such a measure, Luby explains, could provide important clues to the links between emotional development and early mental disorders.

Luby's research is pioneering the study of preschool depression, says Barbara Geller, MD, professor of psychiatry in the division of child psychiatry. Geller, who studies depression in older children, notes that the Early Emotional Development Program is nationally recognized for its innovative approach to infant depressive diagnoses.

An important goal is to derive age-specific diagnostic criteria for depression in preschool children. "If parents come to me now and ask how they can know if their 3-year-old is depressed, I can't answer them," says Luby. "By the end of the depression study, I hope to be able to give that kind of advice."

A more far-reaching implication of the study is the issue of early intervention. A growing body of neuroscience research shows that the brain undergoes rapid change and growth during the first five years of life. Previous studies of childhood depression have concluded that after age 6, depression is a chronic and relapsing disorder.

"The depression study is an opportunity to examine some of the earliest childhood correlates and predictors of major psychiatric disorders," says Zorumski, who also is a professor in the Department of Anatomy and Neurobiology. "This is an area that has long been overlooked, but that is becoming increasingly important as the field of psychiatry begins to understand the role of neurodevelopment in psychopathology. Joan's long-standing interest in early childhood development positions her well to play a major role in this effort."

Luby hypothesizes that, similar to other aspects of brain development, there may be early "critical periods" of emotional development. This also is suggested, she says, by the greater efficacy of some mental health interventions before the age of 5, as in autism for example.

"My hope is that there may be a window of opportunity for early treatment that could change the course of the disorder," she says.

Luby hopes her work will increase awareness and support in St. Louis and beyond, and that it will encourage parents to bring their children in for early assessment and treatment. Doing so may give them their best chance of living happy, healthy lives.
Study Is First To Show A Difference In How Men’s And Women’s Hearts Handle Fats

by Juli Leistner
Illustration by Chris Callan
Are men and women really that different? While opinions of the general public may vary, most cardiologists will answer a resounding “yes” — when it comes to cardiovascular health, that is. It’s been known for years that premenopausal women have a much lower risk for cardiovascular disease than men the same age. A recent study by cardiologist Daniel Kelly, MD, and colleagues at the School of Medicine may help to explain why.

The study, performed in mice, suggests that estrogen may help females do a better job of breaking down fats in the heart and liver — a process critical to cardiovascular health. The investigation found that disrupting certain steps in the fat breakdown process kills male mice, while females can survive the same circumstances. The gender gap disappears in males treated with estrogen.

The study could help explain why premenopausal women are less susceptible to certain cardiovascular problems such as atherosclerosis, which results from a build-up of fats in blood vessels. The risk for women rises after menopause, when estrogen levels drop.

“This study is a milestone in that it is the first time there has been a gender difference shown regarding how the heart handles fats,” says Michael Cain, MD, director of the cardiovascular division.

Maintaining The Balance

The heart and liver use fats as their main source of energy. As fats enter heart and liver cells, a chain reaction of chemical events is triggered. Through this chain reaction — or pathway — the cells either break down the fat for energy or store it for later use, explains Kelly, who is an associate professor of medicine and molecular biology and pharmacology and also directs the school’s Center for Cardiovascular Research.

The part of the pathway responsible for fat breakdown is known to be essential to heart health. Inborn genetic flaws in the pathway are the source of a group of fat metabolism disorders in children and can cause serious heart problems. And the pathway often is weak in adults who have certain types of heart disease. Kelly and his colleagues wanted to learn more about what regulates the fat breakdown pathway, in hopes of gaining a better understanding of these health problems.

They studied genetically altered mice that were, in effect, an animal version of the fat metabolism disorders in children. The mice were genetically engineered to lack a protein called PPAR alpha, suspected to be the master regulator of the fat breakdown pathway. The mice were supplied by Frank J. Gonzalez, PhD, chief of the Laboratory of Metabolism at the National Cancer Institute.

PPAR alpha, Kelly says, was thought to act as a “lipostat” to control fat levels in heart and liver cells, much like a thermostat controls room temperature. At times when the heart and liver need extra energy, such as during exercise, fasting or infection, fat levels rise in the organs’ cells. As they rise, PPAR alpha becomes activated and turns on the fat breakdown pathway. The end result: Fat gets shuttled into cell structures called mitochondria to be converted into energy.

To see the effect of PPAR alpha’s absence on fat metabolism, the researchers needed to simulate the conditions in which PPAR alpha would be expected to “turn on.” Specifically, they needed to artificially force fat levels to rise in heart cells of the study mice. They did so by giving the mice a drug called etomoxir, which partially blocks fat entry into the mitochondria and creates a glut of fat in heart and liver cells.

Normal mice tolerated etomoxir without any trouble. Their bodies cleared the glut of fat and found a way around the mitochondrial blockade to maintain energy supplies for their hearts, as expected. Results among the genetically altered mice, however, were totally unexpected: all eight males died, while only two of the eight females died.

The photos show fat accumulation (stained red) in liver tissue in a male mouse, left, and in a female mouse, right. Males show considerable accumulation of fat in both heart and liver, while the females’ tissue looks similar to control animals.

Tobias and Hortense Lewin
Professor of Cardiovascular Diseases and director of the cardiovascular division.

Outlook, Winter 1998
The cause of death in the mice was twofold: Within hours of receiving etomoxir, heart and liver cells in the mice that died became choked with fats, which interfered with normal heart function. In addition, apparently unable to use fats for fuel, they switched to the next best energy source: glucose. As glucose supplies ran out, their blood glucose plummeted to fatal levels.

In the female survivors, fats also accumulated initially, but were cleared over several days: ‘There is some pathway in the females and in the males who got estrogen that clears out the fats. We just don’t know what it is yet,’” Kelly says. Female survivors’ glucose levels also dropped early on but then rebounded, apparently as they switched back to burning fats or tapped some other energy source, he adds. Kelly notes that the 25 percent death rate in females and in estrogen-receiving males may result from estrogen fluctuations or other factors.

Drawing Parallels

The genetically altered mice in Kelly’s study serve as a valuable model for studying children with genetic disorders in fat metabolism. These children experience problems virtually identical to those seen in the genetically altered mice. Their disorders can be fatal if not properly treated. “Under normal conditions, these kids do pretty well,” Kelly says. “But if you subject them to conditions that require a great deal of fat metabolism — fasting, infection or prolonged exercise — they develop a crisis.” As in the mice, fats accumulate in the children’s hearts and they burn glucose for energy. Without medical intervention, the children can die of hypoglycemia or heart failure.

Interestingly, if they survive their first decade, they grow out of the problem; whether hormones play a role is not known.

“What’s fascinating to me about this work is that it’s a good example of how you can study a relatively rare disease and learn things that might have implications well beyond that,” Kelly says.

But are Kelly’s findings likely to apply in populations other than these inborn metabolic disorders? “Probably,” says Linda Peterson, MD, instructor of medicine, whose own research focuses on estrogen’s effect on blood vessels (see sidebar). “If estrogen is affecting fat metabolism in the heart — even though he first showed it in this one isolated group — then it probably has that effect in everybody. Because all hearts use fats for fuel.”

Kelly and his colleagues are now taking their work further. Among the questions they hope to answer is there an alternate fat metabolism pathway in females regulated by estrogen? Do male hormones play a role? Does PPAR alpha contribute to the development of atherosclerosis in mice?

The next step will be to examine these same questions in humans.

Linda Peterson, MD, uses positron emission tomography to show three different views of the heart. Colors indicate the amount of blood flow in the heart from the three perspectives: top, short axis; middle, horizontal long axis; and bottom, vertical long axis. (See sidebar)
PPAR alpha is already implicated in certain human heart conditions such as heart failure and cardiac hypertrophy; people with these conditions have low levels of PPAR alpha.

"We'd like to believe that this work might ultimately lead to therapies to manipulate this fat metabolism pathway," Kelly says. "It may be possible to develop drugs that provide the metabolic effects we want, but without unwanted side effects."

Kelly's findings underscore the importance of taking the gender gap seriously, says Cain. "As research in cardiovascular disease progresses, it is essential that studies take into account both male and female genders," he says. "Studies performed in one gender aren't necessarily applicable to the other."

In a recent study, Peterson used a light laser to examine blood flow in capillaries and found that estrogen improved blood flow. In fact, the women taking estrogen had blood flow similar to premenopausal women roughly 15 years their junior. "So it seemed that the estrogen was restoring blood vessel function to a more normal or younger state," Peterson says. She is now doing a similar study with ultrasound to gauge estrogen's effect on dilation in the brachial artery of the arm, which serves as a good model for the coronary arteries. She also is employing positron emission tomography (PET) to measure total blood flow in the heart muscle itself. The goal of this work is to see whether estrogen, through its effects on blood vessels, influences the amount of blood that actually reaches the heart.

This active area of research is entering an exciting time, Peterson says. As pieces of the estrogen puzzle emerge from both ends of the research spectrum — both basic science and clinical investigation — it may not be long before the elements start fitting together.

Cardiovascular disease is the leading cause of death among both men and women in the United States. As research yields better diagnostics and therapies, it also feeds a growing realization: that what is true for men may not be true for women. Studies of the nature and incidence of cardiovascular disease show that premenopausal women have a significantly lower risk of atherosclerosis and heart attack than males of similar age. Atherosclerosis also tends to be less severe in women, and their plaque buildup even has a different composition than men's. But once a woman hits menopause, the gender gap closes fast.

Because estrogen levels plummet at menopause, this hormone has seemed the obvious suspect to account for the gender gap, says Linda Peterson, MD, instructor of medicine. Researchers are now working to understand more about estrogen's role in heart health, and progress is being made.

For example, several studies, including one by Wendy Kohrt, PhD, research associate professor of medicine, suggest that estrogen may protect women from abdominal weight gain — a risk factor for heart disease in men.

After menopause, women are more prone to accumulating fat in the abdominal area; more research is needed to determine whether this pattern of weight gain is also a heart disease risk factor for women, Kohrt says.

Studies of a more fundamental nature also are turning up answers; estrogen is known to have an advantageous effect on the balance of "good cholesterol" (high-density lipoproteins) vs. plaque-forming "bad cholesterol" (low-density lipoproteins) in the blood. And research in animals shows that estrogen seems to slow the development of atherosclerosis. Investigators suspect it may act as an antioxidant, inhibiting a key early step in the buildup of cholesterol on artery walls.

An especially promising area of research suggests that estrogen helps arteries to dilate — important for directing extra blood to the heart in times of high energy demands, Peterson says. Most studies of this topic have used injected estrogen; Peterson is trying to confirm past findings under more true-to-life conditions by studying postmenopausal women taking oral estrogen.

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Hitting The Mark

Mammaglobin Proves To Be A Promising Marker For Breast Cancer

BY JIM DRYDEN
Every 11 minutes, breast cancer claims another life.

It's the leading cause of cancer death in women between ages 15 and 54, and one in eight women will get the disease at some point during her lifetime. Of the more than 180,000 women in the United States who will be diagnosed with breast cancer this year, 45,000 will die within five years. This death rate has not decreased, despite earlier diagnoses.

These grim statistics are even more alarming because relatively little is known about what puts a woman at risk for the disease. Scientists have isolated and identified several genes associated with an increased risk — the most famous being BRCA-1 and BRCA-2, which account for roughly 10 percent of all breast cancer cases. But the remaining 90 percent are sporadic.

Because of the small number of inherited cases, many scientists are searching for markers of active disease rather than genetic causes. These markers can reveal when cancer is present because they make proteins that are not made by normal, healthy cells.

Timothy P. Fleming, PhD, assistant professor of ophthalmology and genetics, and Mark A. Watson, MD, PhD, assistant professor of pathology, have spent the last five years looking for novel products of breast cancer cells that could be used as markers. They recently discovered one that appears to hold great promise.

"Traditionally, we characterize most cancers by putting tumor tissue under the microscope and describing the cells," Watson says. "We wanted to go beyond that and actually find molecules and genes made in cancer cells that aren't being made in normal cells. We thought that if we could identify those, we might find markers to detect breast cancer at a very early stage."

In 1995, Fleming and Watson discovered a novel breast cancer-associated gene and named it mammaglobin. Located on human chromosome 11, mammaglobin encodes a small protein that is synthesized predominantly by breast tissue.

The two had been using a popular molecular technique called differential display PCR (polymerase chain reaction). It allows investigators to identify which genes are active in tissues of interest. Watson and Fleming examined tissue samples from patients with breast cancer, comparing healthy and malignant cells from the same woman. The laborious task eventually paid off when the two found that the malignant cells made mammaglobin.

"There were no guarantees we'd find anything," Watson says. "We were hoping to find several genes that might be related to breast tumors in some way."

Tissue specificity is important for a potential tumor marker, and mammaglobin filled the bill because it is made almost exclusively in breast tissue. And while small amounts of the protein can be found in normal breast tissue, much larger amounts are made in breast tumors.

Watson and Fleming say the "home run" of their efforts would be to develop a screening test that can detect mammaglobin in the bloodstream and indicate whether a woman has breast cancer. If their preliminary work continues to progress, it may be possible to develop a blood test for breast cancer similar to the PSA test that detects prostate cancer in men.

"We know that the mammaglobin protein is secreted, and in all likelihood ends up in the blood," Watson says. "So, it may be possible..."
to look for the protein in serum. Or, we may want to look for expression of the gene itself. If, for example, we were looking for tiny deposits of tumor cells in the lymph nodes, we may not be able to see them microscopically. But we could test for mammaglobin expression and then use it as a marker to indicate the presence of tumor cells.

**Mammaglobin Expression**

In collaboration with Suzanne M. Dintzis, MD, PhD, instructor in pathology, research by Fleming and Watson shows that the vast majority of breast tumors — no matter how advanced — express mammaglobin at high levels. In a study of 100 women with breast cancer, the researchers found a high concentration of mammaglobin in 80 percent of the tumor samples. They then compared various tumors that had stained positive for the protein to try to detect differences in mammaglobin expression.

“We looked at the histological grade of tumor, examining very well-differentiated, well-behaved, less aggressive tumors vs. very poorly-differentiated, aggressive, fast-growing tumors,” Watson says. “And there didn’t seem to be any difference in terms of mammaglobin expression.”

They also looked at tumor tissue from women in different stages of disease — those in early stages, where the tumor was confined to a small mass, and those in more advanced stages, where the cancer had spread. Again, they found no differences in mammaglobin expression. They also compared tumors with estrogen receptors to those without and did other comparisons to learn whether different types of breast tumors expressed different amounts of mammaglobin.

“It doesn’t appear that the expression of mammaglobin correlates with any of those parameters,” Fleming says. “Our experiments suggest that mammaglobin may be a very promising marker for all breast cancer, no matter what the stage.”

About 20 percent of breast tumors did not express mammaglobin, the researchers say, adding that those tumors may have originated from a different cell type within the breast or that the cancer prevented mammaglobin synthesis by mutating its gene. In spite of the fact that some tumors were not mammaglobin-positive, Fleming says the protein may still be a useful addition to other proteins that have shown promise as a breast cancer marker, such as HER-2/NEU.

“We have seen mammaglobin overexpression in breast tumors twice as frequently as that reported for HER-2/NEU, and because it is so breast-specific, we think mammaglobin may be clinically useful,” says Watson.

Fleming says about 40 percent of tumors overexpress HER-2/NEU. A small number of other tissues also express the protein.

**Detecting Cancer Spread**

Fleming and Watson also are testing mammaglobin as a possible tool to detect breast cancer spread. If the mammaglobin gene is expressed in a lymph node, chances are high that the cancer has spread beyond the breast, they say, even if standard tests fail to detect malignant cells. About 20 percent of women with no sign of cancer in their lymph nodes still experience a relapse of the disease.

“After surgery, the pathologist examines a lymph node sample under the microscope,” says Watson. “If there is no evidence that the cancer has spread, then the prescribed treatment may be less aggressive. But if we could test for mammaglobin, and the results were positive, we...”

Mark A. Watson, MD, PhD, left, and Timothy P. Fleming, PhD, have discovered a marker for breast cancer, called mammaglobin, that may one day benefit treatment and early diagnosis of the disease.
might say that even though we don't see any cancer with our traditional tools, mammaglobin production indicates that some cancer cells must have spread into the lymph nodes, so a more aggressive treatment regimen may be necessary.

The researchers have been working with John F. DiPersio, MD, PhD, professor of medicine and associate professor of pediatrics and pathology, to evaluate mammaglobin expression in women with advanced breast cancer who are undergoing autologous stem cell transplants.

Before therapy begins, doctors collect and store circulating bone marrow cells using a procedure called pheresis. After treatment, which usually is high-dose chemotherapy and radiation, cells are reinfused into the patient, significantly reducing the period of post-chemotherapy immune suppression.

Preliminary findings with DiPersio suggest that approximately 60 percent of pheresis products collected from patients with advanced breast cancer are positive for mammaglobin expression. This could indicate that bone marrow cells contaminated with cancer cells are being reinfused into patients. DiPersio now plans to determine differences in outcome between women whose transplants are positive or negative for mammaglobin.

DEVELOPING VACCINES

The mammaglobin gene also is a potential target for new cancer therapy. Because it is expressed predominantly in breast tissue and at very high levels in breast tumors, Fleming and Watson hope it may be a good target for immune-based therapy.

The Seattle-based biotech firm Corixa is developing a vaccine that soon may begin Phase 1 clinical trials. The principle behind the treatment is to cause an immune response against the mammaglobin protein in breast cancer patients. Because the protein is specific to the breast and to breast cancer cells, such therapy theoretically could destroy mammaglobin-positive cancer cells without harming healthy cells.

One obstacle to the potential vaccine and diagnostic test is that mammaglobin also is found in healthy breast tissue, though at much lower levels. And Fleming and Watson have preliminary data indicating that the mammaglobin gene may be activated in proliferating breast tissue, which means pregnant women or girls in puberty also would have high levels of mammaglobin protein without having cancer.

But Fleming and Watson are leaving the clinical issues to others. As basic scientists, they are more interested in the biological function of mammaglobin in both normal and malignant breast tissue.

Nevertheless, the two say they are excited about having made a discovery that may have broad impact in the clinic.

"I've been a bench scientist my whole life, and this is the first time that I've been involved with clinicians and companies like this. It's very exciting," Fleming says.

Watson shares his enthusiasm and says he hopes their discovery will make life better for women with breast cancer.

"The whole reason I became interested in this problem is that breast cancer is such a public health issue," says Watson. "When we started, we were kind of shooting in the dark. I hope that soon we can share our good fortune with the women who are victims of this devastating disease."
High-Touch
vs.
HIGH-TECH

BY CANDACE O’CONNOR
THE CENTER FOR HEALTH CARE QUALITY AND EFFECTIVENESS WORKS TO ENHANCE PATIENT CARE

As co-directors of the Center for Health Care Quality and Effectiveness, Wm. Claiborne Dunagan, MD, and Daniel Silverman, MD, spend much of their time studying clinical statistics from throughout the BJC Health System. Is the rate of infection after bypass surgery too high in a certain hospital? Are patients with asthma or diabetes visiting emergency departments too often? The two are looking for areas, large or small, in which the center can work with physicians to improve the quality and efficiency of care.

Last spring, they flagged congestive heart failure as an area that needed work. Within the BJC system alone, heart failure accounts for 10,000 admissions each year. It is the leading cause of hospitalization among Medicare enrollees. In 1997, 1,800 people — 25 percent of all heart failure patients — were re-admitted to the hospital within 90 days of their first stay.

One patient's case was all too typical. The man received the latest treatment at a BJC-system hospital, then went home with a fistful of prescriptions.

"He couldn't afford to get them all filled," says Dunagan, assistant professor of medicine and vice president for system quality, BJC Health System. "When he started having sympotms again, he called his doctor for an appointment and they gave him one for later in the week. He was a stoic guy and said he'd be there. But before he could get in, he was back in the hospital with acute heart failure."

Patients like this would benefit from ongoing follow-up — from a new program, staffed by watchful health care professionals, who would make sure patients got prescriptions filled, kept doctors' appointments and showed no signs of recurrence. So the center's staff came up with the concept for the innovative "People with Heart" program.

"Large hospital systems tend to be focused on acute illness," says Silverman, associate professor of clinical psychiatry and BJC vice president for clinical effectiveness who joined the center eight months ago, "but we wanted to focus on improving patients' well-being and function. So the answer was to build programs like 'People with Heart' that represent a different philosophy of health care."

The center, founded by Dunagan late in 1994, is well equipped to design a novel program like this one. Funded by BJC and collaboratively supported by the School of Medicine, the center serves as a kind of internal consulting group for the entire BJC Health System. Its 27 staff members — who have clinical experience along with backgrounds in business, public health and health administration — work closely with physicians to assess existing clinical efforts and survey patient satisfaction. Then, based on their findings, they facilitate the testing and implementation of new approaches aimed at enhancing patient care.

Already, they have been successful, garnering accolades and sponsoring activities that have led to more than $1 million in grants for collaborative projects at BJC and the School of Medicine. For example, Aetna Academic Medicine and Managed Care Forum recently awarded a team of School of Medicine and center investigators, headed by Benjamin Littenberg, MD, associate professor of medicine, a $360,000 grant to help study the heart failure program.

But efforts like these, though exciting, are just the first steps toward the center's goal of bringing to life a broader, fully integrated vision for health care at BJC, Barnes-Jewish Hospital and the School of Medicine. Right now, the center is still performing what Samuel Nussbaum, MD, calls "random acts of clinical improvement," such as lowering the rate of Caesarean sections or improving immunization statistics.
"These are wonderful clinical initiatives, but they don't constitute a whole system of care," says Nussbaum, professor of clinical medicine and BJC executive vice president, medical affairs and system integration. "Eventually, we want to take people at risk for developing disease and minimize those risks to identify individuals with early-stage disease and prevent its expression, and to manage patients with chronic illness in an optimal fashion. When we have done that, we will have created population health and extraordinary clinical quality."

The comprehensive new heart failure program is a step in that direction. To plan it, Silverman began looking at possible models. By luck, he also met Joseph Rogers, MD, assistant professor of medicine and heart failure expert, who had directed a similar, highly successful program in Kansas City.

"We know how to take care of heart failure patients," says Rogers. "But there's a disconnect between what we know and what actually happens. There's a lot of data showing that the drugs we know to be effective are markedly under-utilized."

So Rogers and Gregory Ewald, MD, became co-medical directors of the new "People with Heart" program, working with the center staff on its development. Together, they designed it as a physician-supervised, nurse-directed program that would begin with 100 heart failure patients for whom the BJC system is responsible through its managed care organization.

"If you look at the data on this kind of program, the reduction in hospitalizations is 30 to 80 percent, and we're targeting a reduction of about 50 percent," says Rogers. "So if a heart failure admission costs around $5,500, and you're a system with a sizable group of at-risk patients, then you're going to be saving a lot of money."

But all the organizers add that this program — like others facilitated by the center — is not driven primarily by financial considerations, but by its promised improvements in the quality of care. In fact, if they can demonstrate improved disease management with the initial group of participants, they hope to open the program more widely to community physicians and their patients.

On the second day, the patient gets a call from BJC Telephonic Nursing, a service staffed by nurses who can follow up on the specialized treatment plan recommended by home health. After that, they make weekly phone calls for the first month, then every other week as long as needed. Nurses also make more home visits as appropriate.

During these calls, the nurses will be listening for signs of deterioration in the patient's health. They will use a special rating scale, devised by Littenberg and Rogers, to tally increases in weight and symptoms. If the score is high, then the nurses will be able to alter diuretics or medications on their own. Based on orders from the patient's doctor. And the patient also can call in and ask questions on a 24-hour hotline.

Each piece of the process involves paperwork — guidelines, fact sheets, sample letters, educational materials for physicians and patients, even a patient ID card — all carefully developed by the center's staff. "So this is an elaborate program," says Silverman, "but we believe it will enhance the quality of care."

Other medical centers have tried such programs, but most are designed by insurance companies with different goals in mind. "They are less interested in providing patients with superb care and more interested in keeping them from making emergency department visits. They do some calling and computer checking, then just send a fax to the doctor's office. That approach is what I would call 'high-tech,'" says Silverman. "We are 'high-touch.'"

"We think that our program is unique in its attributes and in its
home," agrees Dunagan. "With the intellectual contribution from the School of Medicine and the resources of BJC, we believe that we can achieve an unparalleled level of performance."

"People with Heart," which will be funded and managed by Health Management Partners, the School of Medicine and BJC's jointly owned Management Services Organization, has just received budget approval and will soon begin signing up patients. It joins a list of 10 other programs supported by the center that are already in place or are being developed. They include the Community Asthma Program for Children (CAP-C), a program directed by Robert C.

Drunk, MD, professor of pediatrics, aimed at reducing hospital stays and emergency department visits. CAP-C has already enrolled more than 400 children in three community practices and will expand to an additional seven sites in 1999.

Other center-supported programs just getting underway include those for adult asthma, directed by Mario Castro, MD, assistant professor of medicine; anticoagulation services, directed by Brian F. Gage, MD, assistant professor of medicine; and community-acquired pneumonia, directed by Linda M. Mundy, MD, assistant professor of medicine. Still under development are new efforts in diabetes, depression, hypertension and women's health.

"I'm excited about the progress we have made, and I'm optimistic about what we are going to accomplish," says Dunagan. "And I say that in the face of a growing recognition of serious quality problems in health care. We're among a small group of systems that have the right kind of capabilities to do an effective job of changing that."

"We are poised to make a contribution to the way in which health care is delivered in this system and nationally as well," adds Silverman.

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**Innovations IN Health Care**

One of the first initiatives developed by Wm. Claiborne Dunagan, MD, in the early days of the Center for Health Care Quality and Effectiveness was "Innovations in Health Care." The program, co-directed by Bradley A. Evanoff, MD, Richard and Elizabeth Henby Sutter Professor of Occupational, Industrial and Environmental Medicine, and Gerald Medoff, MD, professor of medicine and of molecular microbiology, is funded by BJC and provides grants of up to $20,000 to BJC-system physicians and nurses who want to investigate new ideas for improving health care delivery.

Since the Innovations program, administered by coordinator Diana Bose, was announced in February 1995, it has funded 22 short-term studies totaling $372,000. Some of the results have been published, and many projects have shown remarkable results. Tim Goodnough, MD, professor of medicine and pathology, completed a study last year involving the removal and storage of a patient's own blood during surgery. So far, the technique has saved $110,000 at Barnes-Jewish Hospital and also has been implemented at other hospitals.

The leading recipient of Innovations grants is Marin N. Kollef, MD, associate professor of medicine and director of the medical intensive care unit, who has taken part in five studies, three of them as principal investigator. His first was based on a standard ICU dilemma: When should a patient be weaned from the ventilator? In the past, this decision has been the responsibility of the physician — who may not be nearby at the moment when the patient is ready.

So Kollef designed a new weaning procedure: a careful step-by-step protocol, administered by the bedside nurse or respiratory therapist with the consent of the physician, to get the patient breathing independently as soon as it is safe. He tested this protocol using Innovations grant money to pay for help with data collection and entry.

The results were favorable. In fact, Kollef's weaning protocol has been adopted as the standard of practice in medical ICUs throughout the BJC system. And the study led to an article in a 1997 issue of the journal Critical Care Medicine.

"These grants help us identify what optimal medical practices ought to be at the Medical Center," says Kollef. "But I also see them as a tool for investigators who are struggling because it is so difficult right now to get support for clinical research. I think the Innovations grants are a wonderful mechanism in both these areas."
Health Care Ambassador
Japanese Student Hopes To Bridge Health Care Management Philosophy Between The United States And Japan

by Keiko Kono

As the first Japanese student of Washington University's 52-year-old Health Administration Program, Keiko Kono says she is eager to introduce American health care management to Japan. A second-year student of the program, she is learning a new style of health care management, which she says is 15 years ahead of her native Japan. Kono, who wants to become an advocate of the U.S. health care management system, plans to apply and be selected for a fellowship within a U.S. integrated health care system. Her ultimate goal is to become a bridge between the United States and Japan in the area of health care management and to improve health care in both countries.

Kono, who is a registered pharmacist, is also the first HAP student to serve as an intern with BJC International Healthcare Services, an organization that works to advance BJC's global health care presence. It is based on the premise that "health care excellence knows no boundaries." Kono, who is particularly concerned about global health care, says the mission is especially applicable in developing countries where it is difficult to provide quality of care and access to health care. She says international patients who need complicated or high technology treatments, such as an organ transplant, are eager to come to the United States. As an international student studying here, Kono says she copes with situations much like those of the international patient — a different culture and a language barrier.

My decision to come to the United States to study health administration can be traced to my senior year at Teikyo University's health care finance and accounting for cost savings. As a pharmacist intern, I was frequently surprised to find five different medications for something like a simple cold when I looked at prescriptions. Moreover, it was not unusual for patients to go to the university hospitals and large medical centers for simple illnesses. In the United States, just imagine going to Barnes-Jewish Hospital to get treated for a cold or stomachache.

To strengthen my understanding of the Japanese health care industry, I became a medical representative at Otsuka Pharmaceutical Co., a major Tokyo-based pharmaceutical company, in the late 1980s. Although Japan is an advanced country in many respects, its society still clings to conservative views regarding the types of jobs women should hold. At that time, only Otsuka hired female medical representatives. Although I applied to other major pharmaceutical companies, they often said they had no experience hiring female medical representatives, or they believed that females would not be accepted by in-house male medical representatives or by clients. Otsuka attracted talented applicants and was regarded as highly

Keiko Kono, right, a HAP graduate student who wants to improve health care in her country, holds a small Japanese flag. To Kono's right is James O. Hepner, PhD, director of the Health Administration Program, and Tina Ahearn, RN, BJC International Healthcare Services manager and Kono's mentor.

School of Pharmacy in Japan, when I was a pharmacist intern at the university's hospital. At the time, Japanese National Medical Insurance was based on a fee-for-service system, and hospitals only had to focus on volume-oriented management issues, such as overmedication, longer lengths of stay and excessive laboratory tests. Health administrators were not required to know such disciplines as health care finance and accounting for cost savings. As a pharmacist intern, I was frequently surprised to find five different medications for something like a simple cold when I looked at prescriptions. Moreover, it was not unusual for patients to go to the university hospitals and large medical centers for simple illnesses. In the United States, just imagine going to Barnes-Jewish Hospital to get treated for a cold or stomachache.

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competitive. The formidable task of competing with other people inspired me and pushed me to give my all. I soon learned that there was a huge difference between corporate thinking and department thinking about female medical representatives. For example, my boss was not willing to let me have responsibility for any hospitals with which Otsuka had existing contracts because he was skeptical that my being a female would hinder my job performance and would cause us to lose our contract. I realized that the only way to be accepted by my colleagues was to show my ability. I focused on forging new contracts with hospitals through clinics at huge medical centers. Due to my endeavor, I was responsible not only for prominent medical centers but also for the best hospitals in Japan. And I was able to help Otsuka raise sales revenues from $150,000 to $1 million between 1991 and 1994.

Eight years as a medical representative and clinical laboratory consultant with Otsuka gave me opportunities to assess management styles and strategies of Japanese hospitals. I was able to discuss with many health care executives and medical staffs the existing problems and future direction of Japanese health care. Just this past November, the Japanese government launched a pilot prospective payment system based on diagnostic related groups, or DRGs, at 10 major government-owned hospitals in Japan. If the pilot plan is successful and offers high-quality care with cost effectiveness, a prospective payment system based on DRGs will expand to other hospitals. In addition, the government conducts comprehensive medical insurance reform every two years. Thus far, insurance reform has from fee-for-service to cost-containment (also known as capitation) by the year 2000, and it wants to establish an adopted standard of care, such as critical pathway and case management protocols, which currently does not exist.

Most Japanese hospital administrators I knew realized the need to change but were anxious about the new comprehensive health care reform. They also realized that their hospitals needed to embark upon the transition to an integrated finance and delivery system. At that time, they needed qualified health care professionals to cope with the new comprehensive reform plan. Consequently, after passing the reform, a survey conducted by the Japanese Not-For-Profit and For-Profit Hospital Association showed that 70 percent of all hospitals operated at a loss despite their efforts at saving. This development reinforced the idea I had held previously about the need to research American health care management. I resigned from my position with Otsuka to study health care management in the United States. By doing this, I hope eventually to improve Japanese hospital operation. Unfortunately, no Japanese universities offer an MHA degree. I had not practiced much spoken English and did not have any friends or relatives in the United States; however, I was eager to challenge myself to make that next crucial step in my career. After arriving in the states in the summer of 1996, I concentrated for six months on improving my English and researching where I could receive the degree for health care management. In April 1997, I was accepted by Washington University’s Health Administration Program with the assistance of James O. Hepner, PhD, program director.

The health care field is one of constant challenge and change. The concept of health care includes the permanent responsibilities of quality care, cost effectiveness and access to health care. If these concepts overlap, people can obtain significantly improved health care, which should be the ultimate goal. Health care in the United States and Japan have one point in common: both have satisfied two concepts. The United States has quality of care and cost effectiveness, but its system needs better access to health care; Japan has quality of care and access to health care, but its system needs cost effectiveness. If the United States and Japan cooperate by combining the best aspects of their respective systems, both countries will achieve the ultimate goal of effective health care.

“I resigned from my position with Otsuka to study health care management in the United States. By doing this, I hope eventually to improve Japanese hospital operation.”
The Honorable Continuum

"The Honorable Continuum" is a series of profiles highlighting the accomplishments of some who represent the many who embody the unbroken Washington University School of Medicine tradition of excellence — from emeriti professors to current students, from medical graduates to current and former house staff and fellows.

A Voice For Surgeons

As a child in rural Alabama, Samuel Mason Day Jr., MD, was encouraged by his father to become a doctor. Now 84 and retired since 1992, he looks back on a career he loved and still misses, although he enjoys the luxury of more time with four children and four grandchildren. He is emeritus professor of clinical surgery at the University of Florida School of Medicine in Jacksonville, appointed after teaching interns and residents for many years.

After two years of medical school at the University of Alabama, he transferred to Washington University where Evarts Graham, MD, one of his most-admired teachers, guided him to surgery.

He went from residency in New York City to a stint in the U.S. Army as chief of surgical services at the Regional Hospital at Camp Blanding FL, during World War II. That was a turning point — he so liked Florida that he decided "This is where I'm going to stay." He met "a very pretty girl," Margaret "Dolly" Chitty, and said, "This is the girl I'm going to marry." He did both: they were married in 1947, and he practiced general surgery in Jacksonville for 46 years where he also was active in community and professional affairs.

Day performed the first esophagectomy and pancreatectomy in Jacksonville and was for 20 years a director of surgical education at St. Vincent's Hospital. As chief medical consultant to several health insurance plans, he consistently battled to protect patient rights and physician independence. Concerned that general surgeons lacked a voice, Day helped organize local and state chapters of the American College of Surgeons and co-founded the Florida Association of General Surgeons. He is a past president of the Florida Medical Association, which awarded him its highest honor, the Certificate of Merit.

In 1988 he received the Outstanding Service Award from St. Luke's Hospital and in 1990 the Golden Deeds Award from the Jacksonville Exchange Club.

Master Of Challenge

Eugene A. Bauer, MD, HS '68-'71, in dermatology, now vice president for medical affairs and Carl and Elizabeth Naumann Professor and dean of Stanford University School of Medicine, has spent much of the past several years involved in merging the clinical practices of Stanford and the University of California at San Francisco Medical Center. This merger of a public and a private clinical corporation, while the two medical schools maintain their separate operations, has been a major challenge, and Bauer looks with satisfaction on the success achieved thus far.

Major challenges are no novelty to Bauer, who also presides over a large grant from the National Institutes of Health to develop gene therapy for his primary research interest, epidermolysis bullosa, a group of hereditary and potentially lethal skin diseases that typically affect children or teenagers. A research fellowship with Arthur Eisen, MD, longtime head of the division of dermatology at Washington University, determined Bauer's career direction.

He remained on the School of Medicine faculty for 17 years prior to moving to Stanford in 1988, and enjoyed returning last year as the Morris D. Marcus, MD, visiting professor.

Bauer is also one of three co-founders of Connetics Corp., a biotechnology company begun in 1993.

His election to the prestigious Institute of Medicine of the
National Academy of Sciences and to the American Clinical and Climatological Association in 1997 are two of many honors Bauer has received. He is a fellow of the American Association for the Advancement of Science and of the American Academy of Dermatology and a past-president of the Society for Investigative Dermatology. His publications number in the hundreds and he is currently on the editorial boards of several prestigious journals. In 1997 he traveled to Taipei to give the Professor Lu Yau-Chen Memorial Lectureship of the Chinese Dermatological Society.

'Rénaissances Woman'
Roslyn Kaplan Yomtovian, MD '74, relishes her work as director of Blood Bank and Transfusion Medicine activities at the University Hospitals of Cleveland because "blood is, after all, the essence of life itself." Yomtovian also is acting director of the division of clinical pathology and associate professor in the Department of Pathology and Laboratory Medicine at Case Western Reserve University. She is frequently invited to address civic organizations and to interact with the media on issues of blood transfusion utilization and safety, autologous blood transfusion and AIDS. Her community work in AIDS education has earned her several awards including an Outstanding Citizen of

Love For Music & Medicine
Music has been an integral part of Jeffrey P. Simons' life since childhood. An award-winning pianist, he has performed solos with the Johns Hopkins Symphony Orchestra and the Duke Symphony Orchestra, and played trumpet with the Duke University marching band. But he has known since fifth grade, when his teacher taught a class about the heart, that he wanted to be a physician. That decision was reinforced by advice given him by the brilliant pianist and instructor Leon Fleisher, who said, "You can become a physician and still play the piano, but you can never have a career as a concert pianist and practice medicine on the side!"

Simons, a third-year student at the School of Medicine and the Benjamin Milder Distinguished Alumni Scholar, began in high school giving what he describes as his most gratifying performances - piano concerts in nursing homes and retirement communities. He was attracted to Washington University by the emphasis he found on humanities as well as science and by programs such as Humanities in Medicine. A summer research project with Joel Goebel, MD, in the Department of Otolaryngology resulted in a paper and several presentations on postural instability and falling in the elderly and kindled his interest in specializing in otolaryngology. What Simons is certain of is that he wants a career in academic medicine and that whatever specialty he chooses, he will remain devoted to acquiring knowledge and improving life for others. He says, "Thanks to my study of music, I have the discipline I need to pursue such a goal. Thanks to music, I also have a healthy respite from the hard work I love."
J.J. Brown On Life:
The Greatest Pleasure Is Helping Others

by Nancy Mays

PHILANTHROPIST Julius Brown traces his successes — and there are many — to an unusual homework assignment in the sixth grade. Brown's teacher at the time, one firm but caring Miss Palmquist, instructed Brown and his classmates to sell bonds and liberty stamps to aid the nation's World War I efforts.

That night, Brown canvassed his neighborhood, the kind of place where patriotism, rather than pockets, ran deep, and sure enough, he sold every last bond and stamp. The next day, he returned to school with a fist full of money. "I quit," he told Miss Palmquist. "I'm a good salesman."

The paradox, of course, is that a successful homework assignment inspired Brown to quit school, a move he regretted later in life. But in doing so, Brown, now 94, embarked on a thrilling roller coaster of a career in which he sold everything from liquidated clothing in downtown St. Louis to ore in the Ozarks.

"What a time I had," he says in his Frontenac home. "A lot of fun."

Since his retirement some 20 years ago, Brown has embarked on a new career giving.

"I came with nothing. I'll leave with nothing," says Brown. "The way I see it, any excess money we have is a loan from Papa, the Man upstairs. You pay Him back for your good fortune by helping others. It's that simple."

Like his career, Brown's philanthropic efforts vary enormously, from helping recent Jewish immigrant families get on their feet to providing generous support to researchers at the School of Medicine. In honor of his late wife and mother, Brown established the Nettie and Rebecca Brown Foundation to distribute funds to worthwhile causes.

John C. Morris, MD, Harvey A. and Dorismae Hacker Friedman Professor of Neurology and co-director of the Alzheimer's Disease Research Center at Washington University, says his research has benefited greatly from Brown's support and interest in age-related illness.

"He provided support for dementia research under my direction in the Department of Neurology in 1993, just at the time when genetic factors important for the development of Alzheimer's disease and other dementing disorders were becoming apparent," says Morris. "These funds have enabled us to devote resources to identifying families that appeared to have a genetic predisposition to dementia, recruit them for investigation, and analyze their genetic material for possible mutations or other changes that could lead to the disease. Mr. Brown's gift has been instrumental in much of the work that has resulted from these efforts.

"As a person, Mr. Brown is unfailingly polite and yet very firm in his commitment to advancing cutting-edge research in illnesses that are of special interest to him, particularly those that are age-associated. His dedication in this regard is truly admirable."

Through his philanthropy, Brown enjoys feeding what he calls "basic" needs. For families, that means food and clothing. For researchers, it means no-strings-attached funds for bench research. Brown has given generously to Washington University School of Medicine researchers working on Alzheimer's and Parkinson's disease, as well as those working on osteoporosis and urological disorders. He also has deep concern for children and young adults who suffer from cystic fibrosis.

"It is the spirit in which Mr. Brown gives that is so inspiring," says William A. Peck, MD, executive...
vice chancellor for medical affairs and dean of the School of Medicine. “He is a thoughtful philanthropist, choosing causes with care and passion.”

Brown has a story or two to tell. He can recall, in painfully vivid detail, the dismal living conditions of his childhood. One of seven children of poor Jewish-Romanian immigrants, Brown grew up with hunger pangs and paper-lined shoes. He and his brothers prowled their neighborhood in downtown St. Louis looking for ways to earn a nickel here or a dime there, money that often paid for their next meal. They did the usual — shining shoes and selling newspapers — but even as a boy, Brown’s raw talent for spotting a business opportunity was evident. While hawking papers near Union Station, it dawned on Brown that he could do local businesses a big favor if he steered tourists their way. So he arranged to earn commissions from a nearby hotel and restaurant every time he brought in an out-of-towner.

“I was always thinking of a way to make more money, find new jobs,” says Brown.

In short, he was an old-time trader, whose guiding philosophy was “buy low, sell high.” Brown was, by his own admission, blessed with the ability to spot a deal and a hefty dose of raw confidence to carry it off. Take, for example, the Human Fly. In 1928, when Brown was 24, he was eating lunch in a diner when he noticed a man in white tights taking coins from a handful of people outside. The man then scaled a three-story building, a feat met with applause and wonder. While everybody else left with an interesting story about their day — “Say, honey, I saw a man scale a building today” — Brown went home with a new job: manager for the Human Fly. After that, he proceeded to secure even taller buildings for the Human Fly to climb. Not only that, he charged admission and secured big-name advertisers like Coca Cola®.

The venture was so successful Brown received an exclusive sponsorship offer from Wrigley® gum to take the show to Europe. But Brown, an entrepreneurial nomad at heart, declined and decided to seek more fortune in new ways.

“I have encouraged people to follow his example,” says Burrow. “But never by using his name. He’s not interested in publicity for his actions.”

Indeed not. Brown accrued his wealth in grand and risky fashion, but he gives it away quietly, often even anonymously. He is, however, thoughtful, carefully choosing research efforts and charities to endow. Brown is devoted to helping fund scientific research and encourages his peers to do the same.

What is interesting about Brown’s career — and his life — is his uncanny knack for finding fortune in the rubble. After World War I, Brown sold Army and Navy surplus goods, wool blankets and tents. In the throes of the Depression, he helped liquidate failing retail stores by arranging well-publicized “Going Out of Business Sales.” In fact, Brown convinced a St. Louis clothier to bring in truckloads of additional merchandise for his final sale, a move that ironically proved so successful that the retailer was able to stay in business. Brown’s final big venture came while he was in his late 60s and early 70s, when he contracted with the Monsanto Co. to warehouse and sell its retired and surplus manufacturing equipment. Before then, the equipment in many cases was sold for scrap, so the arrangement proved lucrative for both Brown and Monsanto.

Not surprisingly, Brown is as creative at giving away his money as he was at making it.

The Rabbi Aaron Burrow of the Congregation Nesch Hari Zion says Brown’s extraordinary generosity within the Jewish community has been the inspiration for many sermons.

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“If more people would come forward and give money to researchers, think how that would move medicine forward,” he says. “Within the next generation, there will be spectacular discoveries that will save millions of people in the world. Everyone should be proud to be a part of this most important accomplishment.”

Though Brown has a shelf of notebooks filled with letters of gratitude, he dismisses his philanthropy as nothing more than a “selfish act.”

“The joy I get from giving? You couldn’t imagine. My greatest pleasure in life — really and truly — is being able to help others.”
As you review your personal financial plan, you may find that a **Washington University Charitable Gift Annuity** can be helpful to you if you are age 60 or older. Here's one way you can modify your plan and make a significant gift to the University:

If you are age 72 and create a $10,000 Gift Annuity with cash, you will receive the following benefits:

| Rate of Return | 7.7% |
| Guaranteed annual income for life | $770 |
| Tax-free portion | $405 |
| Taxable portion | $365 |
| Immediate federal income tax deduction | $4,131* |
| Effective payout rate | 11.7% |

You may also fund a Gift Annuity with appreciated securities.

Second Century Award Winners Honored

The Second Century Award celebrates the advent of the second one hundred years of excellence in research, teaching and patient care at the School of Medicine. The awards for 1998 were presented at a gala dinner held at St. Louis’ Ritz-Carlton Hotel on Oct. 9. Honorees for the year were: James S. McDonnell III, Samuel B. Guze, MD, and Grace Nelson Lacy.

James S. McDonnell III, a director and secretary of the James S. McDonnell Foundation, retired in 1991 as a corporate vice president at McDonnell Douglas Corp., where he continued to serve as a director through its 1997 merger with The Boeing Co.

McDonnell has served as a director of the Automobile Club of Missouri and Boatmen’s Trust Co., and as a former chairman of the board of St. Louis Children’s Hospital and the Muny Opera.

He is a member of the School of Medicine’s National Council. From 1979 to 1981, he was a member of the School of Medicine Task Force of the Commission on the Future of Washington University.

For many years McDonnell and his family have been generous supporters of Washington University programs in medical research, notably those in otolaryngology, cancer research, genetics, neurobiology, higher brain function and pediatrics. The new McDonnell Pediatric Research Building is made possible by a $20 million gift from McDonnell, his brother, John F. McDonnell and the JSM Charitable Trust.

Samuel B. Guze, MD, is Spencer T. Olin Professor of Psychiatry at the School of Medicine and was vice chancellor for medical affairs and president of the Washington University Medical Center from 1971 to 1989. He twice served as head of the Department of Psychiatry, from 1975 to 1989 and again from 1993 to 1997.

Guze received his medical degree from the School of Medicine in 1945. His research has been a major influence in bringing about the acceptance of the medical model of psychiatry. His seminal work in the genetics of psychiatric disorders has contributed important knowledge about the genetic vulnerability to alcoholism as well as other conditions including schizophrenia and affective disorders.

Guze has published more than 200 articles and several widely used textbooks. He has been elected to many prestigious societies and is a member of the Institute of Medicine of the National Academy of Sciences.

Guze’s many honors include the Achievement Award from the American Academy of Clinical Psychiatrists, the Distinguished Public Service Award from the Department of Health and Human Services, the Gold Medal Research Award from the Society of Biological Psychiatry, and the Rhoda and Bernard Sarnat Prize in Mental Health from the National Academy of Sciences’ Institute of Medicine. In 1988 he received an Alumni/Faculty Award from the Washington University Medical Center Alumni Association.

Grace Nelson Lacy is a retired educator who devoted many years to teaching and the development of innovative programs for the integration of arts and humanities into elementary and secondary school curricula.

While teaching in the Normandy schools in St. Louis County, she won a number of awards for excellence, including three Freedom Foundation Awards, the Bold Journey Teacher of the Year Award and a Woman of the Year Award.

In the early 1960s, Lacy went to the New York State Department of Education to pioneer a program conceived by Jacqueline Kennedy, with assistance from the National Gallery of Arts and the U.S. Office of Education, to promote art appreciation among youth. Lacy developed multimedia materials and trained teachers to integrate the arts and humanities into the junior high curriculum at 13 project schools.

Concern over the neglect of education for gifted students led Lacy to arrange a series of conferences at the World Trade Center and prepare teaching materials for New York schools on gifted education.

Lacy’s achievements are all the more notable because she has suffered from glaucoma since her early 40s. She has designated through her estate establishment of the Grace Nelson Lacy Glaucoma Research Center at Washington University School of Medicine, dedicated to research in the treatment, prevention and cure of glaucoma.
Each year, the Distinguished Alumni Scholarship Program provides four-year, full-tuition scholarships to selected incoming students. The scholarships are named after alumni who have distinguished themselves as Washington University faculty.

Created in 1989 by the Washington University Medical Center Alumni Association, the program is the School of Medicine's major merit scholarship funded through annual gifts. To date, 41 medical students have benefited from this program.

What follows are this year's alumni honorees and the scholarship recipients, with remarks by faculty members.

John D. Davidson, MD '52
Professor of Medicine

"John Davidson symbolizes the total physician. His remarkable passion for patient care, research and education rekindles our own enthusiasm for medicine. Throughout his career he has worked tirelessly to set a high standard of individual performance, and in doing so has enriched Washington University."

Michael E. Cain, MD
Tobias and Hennostine Lewin Professor of Cardiovascular Diseases
Director, Cardiovascular Division

Davidson Scholar
EVA ANN HURST
BA, HENDRIX COLLEGE, 1998

Mark E. Frisse, MD '78
Associate Professor of Medicine

"We are indeed fortunate to have Mark Frisse at Washington University School of Medicine. He provides the unique combination of medical, computer, business and leadership skills which make our outstanding library such an efficient, helpful and congenial center. In addition, he contributes greatly to the intellectual atmosphere of many parts of the university."

Bernard Becker, MD
Professor Emeritus of Ophthalmology and Visual Sciences

Frisse Scholar
JAMES M. JOHNSTON JR.
BA, WASHINGTON AND LEE, 1995

Philip W. Majerus, MD '61
Professor of Medicine and of Biochemistry and Molecular Biophysics

"Phil Majerus exemplifies what makes Washington University School of Medicine great — an inspiring teacher and mentor, a superb hematologist, and a world-renowned researcher who pioneered the use of low-dose aspirin as an anti-thrombotic agent."

Stuart A. Kornfeld, MD '62
Professor of Medicine and of Biochemistry and Molecular Biophysics

Majerus Scholar
FELIX Y. FENG
BS, STANFORD UNIVERSITY, 1998

Gustav Schonfeld, MD '60
Adolphus Busch Professor and Chairman, Department of Medicine

"Gus Schonfeld’s career has been characterized by continuing growth in both the depth and importance of his research in lipoprotein metabolism, worldwide recognition for his research accomplishments, and in multifaceted managerial talents exemplified by his leadership as chairman of the Department of Medicine."

David M. Kipnis, MD
Distinguished University Professor of Medicine

Schonfeld Scholar
ARTHUR PARTIKIAN
BA, POMONA COLLEGE, 1988

Gary D. Shackelford, MD '68
Professor of Pediatrics and Radiology

"Gary is an excellent role model — smart, multitalented, hard working and constantly striving for excellence. He is a skilled diagnostic radiologist who is concerned about doing the best for his patient. Similarly, he is a dedicated teacher, always striving for the best for his students. His personal interests, talents and skills result in an alumnus appropriate for this honor."

Ronald G. Evens, MD '64
Elizabeth E. Mallinckrodt Professor and Head, Department of Radiology

Shackelford Scholar
HANNAH WUNSCH
AB, HARVARD UNIVERSITY, 1997
REPORT

A Challenge For The Century Club

TWO longtime and generous friends of the School of Medicine, who have requested anonymity, have issued a special matching challenge. For every new member who makes a gift at the Century Club level, the challengers will match those gifts up to 500 new members, doubling the impact of the gift. The Century Club is the school’s group of alumni and friends who make unrestricted annual gifts of $100-$249.

For more information, contact: Tim Bahr, Assistant Director of Annual Giving, Medical Alumni and Development Programs, 4444 Forest Park Ave., Campus Box 8509, St. Louis, MO 63108, (314) 286-0005, bahrt@msnotes.wustl.edu.

Plans For Reunion ’99 Get Underway

REUNION ’99 begins at noon on Thursday, May 6, 1999, with a welcoming cocktail party that night. Class dinners will be Friday night. Scientific sessions will feature some speakers from reunion classes and continuing education credit will be offered. Also on the schedule: tours of the medical school, entertainment by the talented “Docs Off-Duty,” a “State of the Medical School” address by Dean William A. Peck, the alumni awards banquet, and a variety of other social events. The reunion hotel will be the Ritz-Carlton in Clayton. Registration materials will be mailed in late January. Meanwhile, check the web site for information as it becomes available: http://medschool.wustl.edu/alumni. Reunion class chairmen are:

Class of 1939: Benjamin Milder, MD
Class of 1944: Virgil Loeb Jr., MD
Class of 1949: Robert H. Lund, MD, social chair
John Fischer, MD, Joseph Levitt, MD, and Russell Shelden, MD, gift chairs

Class of 1954: Gerald L. Behrens, MD, social chair
Andrew McCanse, MD, gift chair

Class of 1959: Charles C. Norland, MD, social chair
Paul DeBruine, MD, and Ann Filippe, MD, gift chairs

Class of 1964: Ronald G. Evens, MD, social chair
Ronald G. Evens, MD, and Steven Teitelbaum, MD, gift chairs

Class of 1969: Barry Siegel, MD, and Clifton Smith, MD, social chairs
Alan Busby, MD, Garry Fathman, MD, Robert Kolodny, MD, and Barry Siegel, MD, gift chairs

Class of 1974: Ronald K. DeGuerre, MD, social chair
Alan Tiefenbrunn, MD, and Dolores Tucker, MD, gift chairs

Class of 1979: Jeffrey M. Wright, MD, social chair
Kathy Liu, MD, gift chair

Class of 1984: Jennifer Wray Cole, MD, social chair
John Kenneth Appelbaum, MD, and Will Ross, MD, gift chairs

Class of 1989: William C. Schroer, MD, social chair
Rebecca Walker, MD, gift chair

Shelden Gift Will Enhance Anesthesiology Research

RUSSELL D. Shelden, MD, and his wife, Mary, have created a new professorship in anesthesiology at the School of Medicine. The Russell D. and Mary B. Shelden Professorship will be held by Joseph Henry Steinbach, PhD, professor of anesthesiology and neurobiology. Steinbach has been a faculty member since 1984.

The new professorship was established through a gift from the Sheldens. He is an anesthesiologist and a 1949 graduate of the School of Medicine who earned his undergraduate degree at the University of Missouri, Columbia. The Sheldens also have established a professorship there.

From left, Russell D. and Mary B. Shelden with Joseph Henry Steinbach, PhD, the first Shelden Professor.

"Making these gifts is my attempt to further the progress of medical education and research both at Washington University and the University of Missouri," says Shelden, who served on the clinical faculty of the University of Missouri from 1958 to 1983.

Alex S. Evers, MD, the Henry Eliot Mallinckrodt Professor and head of the Department of Anesthesiology, says the Shelden Professorship will help support the department’s extensive research efforts.

Steinbach studies the functions of certain neural receptors. He has directed the department’s research unit since his arrival in 1984. In addition, he is the coursemaster for the Ethics and Research Science Class for the division of biomedical sciences.
WUMCAA Funds Student Projects

Medical student representatives of professional organizations and community service projects made their requests before the executive council of the Washington University Medical Center Alumni Association at the council's first meeting of the new school year on Sept. 28, 1998. In response, the council allocated nearly $34,000 to the following:
- AMA Student Section, American Medical Women's Association, American Medical Students Association, Student National Medical Association, Asian-Pacific American Medical Student Association, Students Teaching AIDS to Students (STATS), Pediatric Care Organization, Perinatal Project, Reproductive Health Project, Student Organized Clinic in Forest Park Southeast neighborhood and the Med Stubs Book Donation project.

The Distinguished Alumni Scholarship Program received the largest allocation, $134,000; the summer Primary Care Preceptorship Program received $8,000. The eight-week clinical preceptorship program, begun two years ago, places selected students who have completed their first year of medical school in the offices of internists, family practitioners and pediatricians all over the world, allowing them to sample primary care early in their training. Many of the preceptors for the program are alumni who provide experiences not available to students on the Medical Campus.

Medical School Memories

Robert T. Striker, MD, PhD '95, center, shares a story with C. Garrison Fathman, MD '69, and Striker's wife, Laura J. Knoll, PhD '94, at a gathering of alumni in San Francisco in October. The three were among 38 alumni and guests who attended the dinner event, hosted by Allan H. Rappaport, MD '72. Among the honorees attending were William A. Peck, MD, executive vice chancellor for medical affairs and dean of the School of Medicine. "Their dedication is one of the major factors underlying the continuing success of the institution."

The Barnes-Jewish Hospital Medical Staff Association is made up of physicians who admit and treat patients at Barnes-Jewish Hospital and who are the full- and part-time faculty of Washington University School of Medicine. The scholarships will be awarded solely on the basis of financial need and academic merit.

R. Jerome Williams Jr., MD, clinical instructor of medicine at Washington University, attended the dinner event and president of the association, says, "It is the Barnes-Jewish Medical Staff Association's hope that these scholarships will reinforce our strong commitment to the School of Medicine."

BJH Medical Staff Offers Full-Tuition Scholarships

The financial burden of medical school will be lifted off the shoulders of some future doctors who attend the School of Medicine thanks to the Barnes-Jewish Hospital Medical Staff Association. The association is donating a portion of its revenue from annual dues to provide a full, four-year scholarship to one first-year medical student each year. The scholarships will begin with the fall 1999 class and will continue indefinitely. Currently, tuition for four years of medical school at Washington University is approximately $118,000.

"These scholarships are a wonderful statement of support for our educational mission from the medical staff association, and we thank them for it," says William A. Peck, MD, executive vice chancellor for medical affairs and dean of the School of Medicine. "Their dedication is one of the major factors underlying the continuing success of the institution."

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20s
Herman F. Eason, MD '27, observed his 96th birthday on Oct. 4. He still drives and works part-time reading chest X-rays.

30s
Helen Aff-Drum, MD '34, received the Emily Bissell Lung Health Lifetime Achievement Award at the ALA/ATS International Conference in April 1998. Drum has devoted more than 60 years to the prevention and treatment of tuberculosis in the greater St. Louis area, and began preventive treatment for children in the 1960s.

40s
Hugh E. Stephenson Jr., MD '45, Crowdon Distinguished Professor of Surgery Emeritus at the University of Missouri, Columbia School of Medicine, is president-elect of the Southern Medical Association.

Mary Scranton, NU '48, writes that it was wonderful to see classmates from the September '48 nursing class at their 50th reunion held in St. Louis September 25-26.

50s
Edgar Draper, MD '53, writes, "Besides a few patients in my home office and professional national psychiatric organizations (program committee chair of the American College of Psychoanalysts), it's duplicate bridge, birding, golf, traveling and Viagra, not necessarily in that order."

Arthur Miller DMD '59, received the 1998 Distinguished Alumnus award from the Washington University Dental Alumni Association. He was recognized for his contributions to general dentistry and to oral and maxillofacial pathology. Miller, who retired in July 1997, was previously professor of pathology at Temple University School of Medicine, and section chief of oral pathology. He is now an emeritus professor of pathology.

60s
Morton E. Smith, MD, HS '61-'66, professor emeritus of ophthalmology and pathology and associate dean emeritus at Washington University School of Medicine, will be chairman of the American Board of Ophthalmology January 1999 through December 1999.

Ronald G. Evans, MD '64, the Elizabeth Mallinckrodt Professor and head of Mallinckrodt Institute of Radiology at Washington University School of Medicine, is the new president of the American College of Radiology. He was installed in September during a ceremony at the ACR's annual meeting in Pittsburgh.

Stephen R. Katz, MD HS '64-'65, was named president-elect of the Connecticut State Medical Society. After one-year, he will automatically succeed to president. Katz had a private practice in obstetrics and gynecology in Fairfield CT from 1971 to 1994. He is now a consultant, writer and speaker on the subjects of health care policy and legislation.

Brian H. Gross, MD '65, works nearly full-time in spite of bilateral inguinal herniorrhaphies, total hip replacement and early Parkinson's Disease.

Jacqueline Zschokke, OT '69, is an injury prevention specialist for the Employee Health Service at Fairview University Medical Center in Minneapolis.

70s
Toby Black, OT '71, has a private pediatric practice and spouse John Black, MD '73, an anesthesia practice in Bowling Green KY. Their son Lee is a junior at Washington University and Sandy is a graduate student at Western Kentucky University in Bowling Green.

Jose B. Crespo, MD '71, is medical director of the laboratory of clinical medicine at Immanuel-St. Joseph, Mayo Health System in Mankato MN.

80s
Donald R. Graham, MD '74, is special consultant to the mayor of Springfield IL for leptospirosis.

Laurence Eley Blanchard III, MD '76, became president of the Medical Society of Virginia on Oct. 31. The Blanchard's son, David, 20, is in his third year at the University of Virginia. Daughter Berkeley, 16, is a sophomore in high school.

Jorge Covarrubias, MD, HS '76, has returned to Phoenix AZ to a busy multispecialty clinic. He sends greetings to all his teachers and classmates and notes that he got married in October 1998.

Linda C. Loney, MD '76, has been named associate medical director at Massachusetts Hospital School where she is also chief of pediatrics.

Ada Jemison, MD '78, is medical director of the Center for Behavioral Health in Bloomington IN. Most recently, she was a consulting psychiatrist for the Maternal Mental Health Program of South Auckland Health in Auckland, New Zealand. Prior to that, she had a private psychiatric practice in Houston, where she specialized in child, adolescent and family psychiatry, women's psychiatry and AIDS-related issues.

Mary Gregg, MD '80, practices cardiothoracic surgery in Seattle. She and her husband keep busy with their two children, Jackson, 4, and Lucas, 2.

Fred A. Norman, MD '80, broke an ankle on the final day of telemark skiing last April and says that in spite of now having greater understanding of orthopaedic injuries, he "can't wait for the California snow season to begin."

Theresa Vicroy, MD '84, is in the private practice of internal medicine in Houston. She writes, "My husband, Robert, and I stay busy with five kids, one dog, three cats and a bird."
Patrick J. Wiles, HA '84, was appointed president and chief executive officer of the Sisters of Charity Hospital and St. Joseph Hospital in Buffalo NY in March 1998.

Brad Roter, MD '86, and his wife, Veronica, are thrilled with the birth of their son, Isaac Benjamin, on Jan. 30, 1998. Roter is a family physician and medical site director at the non-profit Country Doctor Community Clinic in Seattle, providing family, obstetric and AIDS care to the underserved. He is an associate professor of family medicine at the University of Washington.

Elizabeth Puscheck, MD '87 HS '91, was among 20 physicians from across the United States selected for the Association of Professors of Gynecology and Obstetrics (APGO) and Solvay Pharmaceuticals Educational Scholars Development Program. The 15-month program delivers instruction through intensive seminars and individual study at Northwestern University, where Puscheck is on the faculty.

John Butman, MD '89, writes from Albuquerque, "I just married these two: Patty Lee and her 3-year-old daughter Jana, who keeps us honest. Our two dogs can't wait to go hiking in the wild canyons of New Mexico."

Howard Ilivichy, MD '89, and Sarah Keller, MD, are proud parents of Isaac, 3, and Anna, 1. Ilivichy practices psychiatry at the Philadelphia VA Hospital, and Sarah is in private practice in reproductive endocrinology.

Dorothy Ann Heuman, OT '92, enjoys OT, is glad she made a career change and works for the Peranoe Special Education District in Red Bud IL. The special district covers two counties and nine school districts.

Margaret Kunes, MD '92, is a general and vascular surgeon in Yuma AZ.

David and Robin Councilman, both MD '93, are now family practice physicians in Minneapolis. They have one child, Dana Lynn, 2.

Roger Fontes, MD '93, is on the faculty at the University of California, San Francisco, working at the local trauma hospital.

Daniel Sommers Plax, MD '93, is happily in pediatric practice with his father in St. Louis. He has two stepchildren, Kate, 11, and Jonas, 9, a 19-month-old named Charlie and a baby due in March.

Peter L. Apicella, MD, HS '94, writes, "My wife Sherri and I have a two-year-old, Alexandra, and another child on the way in January. All is fine in Salem OH with my radiology practice."

Jane Chen, MD '93, is in her third year of cardiology fellowship at Beth Israel Hospital in Boston. Her e-mail address: jchen@bidmc.harvard.edu.

Pamela Frei, MD '96, is stationed in Yuma AZ as a flight surgeon for the Marine Corps. She explains, "A flight surgeon is a physician for aviators, not a 'surgeon' in the traditional sense."

Beth Daniels, OT '96, is a board member for Region IV of the American Occupational Therapy Political Action Committee. She is responsible for promoting the political interests of the occupational therapy profession, fund raising and advocating for political action within a 10-state region.

IN MEMORY

John L. Sandson, MD '53, dean emeritus of Boston University's School of Medicine, died Oct. 30. He was 71. Sandson, a general internist and rheumatologist, was dean of BU's School of Medicine from 1974 until 1988 and remained a faculty member there until 1996. During his tenure as dean, he initiated a wide range of successful programs that fostered advances in biomedical research and attracted high-caliber students and faculty. He oversaw the creation of the Boston University School of Public Health in 1976, one of the few public health schools in the country at that time to be part of an established medical school. He also established a successful low-interest student loan revolving fund and developed a minority recruitment program. Prior to becoming dean of BU medical school, Sandson was associate dean for health services at Albert Einstein College of Medicine in New York and served as medical director of the Hospital of the Albert Einstein College of Medicine. Sandson is survived by his wife, Hannah; son, Thomas A.; daughter, Jennifer M. Frank, and three grandchildren. Memorials may be sent in care of: John Sandson Student Revolving Loan Fund, Development Office, L-219, Boston University School of Medicine, 80 E. Concord St., Boston MA, 02118.

Larry David Schertz, MD '85, died of brain cancer June 3, 1998, at his home in Falls Church VA, where he had practiced neuroradiology. He is survived by his parents, David and Doris Schertz, four brothers and a sister, and his life partner, Dennis Holmes, MD. The Larry Schertz Memorial Scholarship Fund has been set up at Glenbard East High School in Glen Ellyn IL, where he had been class valedictorian and a track and field star. He was also an accomplished pianist.
Outstanding Teachers: First- and second-year medical students recognized outstanding teaching at a schoolwide ceremony in November at the Eric P. Newman Education Center. The honorees and their awards were: front row, from left, Rosa M. Davila, MD, Class of 2000 Lecturer of the Year; Jane Phillips-Conroy, PhD, Class of 2001 Professor of the Year; back row, from left, Erika C. Crouch, MD, PhD, Class of 2000 Coursemaster of the Year; Scot G. Hickman, PhD, Class of 2000 Professor of the Year; Robert S. Wilkinson, PhD, Class of 2001 Coursemaster of the Year; John C. Cole, Class of 2001 Teaching Assistant of the Year; and Jean Pappas Molleston, MD, Class of 2001 Stanley Lang Lecturer of the Year. Not pictured is Bradley A. Evanoff, MD, also named a Lecturer of the Year by the Class of 2000. In addition, students recognized a number of professors with distinguished teaching awards. They are: John P. Atkinson, MD; Dana R. Abendschein, PhD; Michael G. Caparon, PhD; William E. Clutter, MD; F. Sessions Cole, MD; Glenn C. Conroy, PhD; Leslie E. Kahl, MD; Jeff W. Lichtman, MD, PhD; David N. Menton, PhD; Robert W. Mercer, PhD; Jean P. Molleston, MD; Sunita Mutha, MD; Alan Pearlman, MD; Joseph L. Price, PhD; Kevin A. Roth, MD, PhD; Jeffrey E. Saffitz, MD, PhD; W. Thomas Thach, Jr., MD; David T. Walden, MD; and Alison J. Whelan, MD.
Slam the Brakes on Tobacco contest winners Joe Lang, center, and Audrey Lang of St. Louis, show their winnings from the BJC and School of Medicine-sponsored competition for preventing tobacco use. The two were selected from more than 500 areawide middle school students who designed bumper stickers and wrote slogans with an anti-tobacco theme. Joe, the grand prize winner, received a BMX bike and bike helmet, and his sister, Audrey, the first place winner, took home a $75 gift certificate to the Galleria shopping center. Mary Mason, MD, chief resident for the internal medicine track at Washington University holds Joe’s winning “Break the Habit” bumper sticker.