Saving Hearts
with Cardiac Surgery

Also in this issue
• Transplantation
• Mayo clinical research
For many people, autumn means a return to books and classrooms. At Mayo Clinic, education is a year-long endeavor and a deeply rooted commitment. We are a “learning organization of medicine.” In order to provide patient care of the highest quality, we add to the body of biomedical knowledge and pass that knowledge to other students and trainees, allied health colleagues, the medical profession and general public.

Emerging technologies and new ways of learning are opening exciting new opportunities. By supporting the endowment, scholarships and fellowships, facilities, programs and technology, your gifts are vital to the success of what Dr. William J. Mayo called “this adventure in education.”

Denis A. Cortese, M.D.
President and Chief Executive Officer of Mayo Clinic

A learning organization of health care

Generosity and commitment support Mayo

Philanthropy has played a vital role at Mayo Clinic since the first gift made by Drs. Will and Charlie to establish the Mayo Foundation for Medical Education and Research. This spirit of generosity and commitment continues to support Mayo as we prepare for the changes necessary in this new century.

To continue to deliver excellent patient care with a unique, individualized value and to educate future health care providers, it is essential to manage information. Benefactor support made it possible for Mayo Clinic to work on a solution to organize and manage the wealth of information available. In 2003, Mayo Clinic launched an Education Technology Center (ETC) to create the technological infrastructure that will capture and distribute medical knowledge and assess learning methods. This new technology will facilitate lifelong learning of health care professionals.

Mayo’s mission to provide the best care to every patient every day through integrated clinical practice, education and research is highly dependent on the partnership with allied health professionals. Mayo School of Health Sciences helps us to fulfill our mission. Through generous benefactor support, student scholarships in the Mayo School of Health Sciences have enabled talented individuals to fulfill their career goals and preserve the Mayo model of excellent integrated care.

Amy W. Williams, M.D.
Associate Medical Director for Development-Education
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About the cover:
A therapeutic pillow supports the post-operative rehabilitation of cardiac surgery patients. Here it provides incisional support to the patient while walking.
On May 12, 2005, Mayo Clinic Division of Cardiovascular Surgery marked 50 years since John W. Kirkland, M.D., and colleagues first used the enhanced Mayo-Gibbons heart-lung machine to do open-heart surgery. Their first patient was a 5-year-old girl.

In honor of this anniversary, articles in this section highlight the rich history, current achievements and future directions of heart surgery at Mayo Clinic.

**World famous at 5**

Linda Stout, the girl who underwent the first open-heart surgery at Mayo, returned for the 50th anniversary celebration. She talks to Mayo Magazine about what she remembers about the event that saved her life and made her world famous at the age of 5.

**Aspiring to pain-free heart surgery**

Medical-surgical partnerships and state-of-the-art technology are the foundations of Mayo’s continued leadership in cardiac surgery. More than 3,800 heart operations are performed each year at Mayo. Cardiovascular surgeon Thoralf M. Sundt III, M.D., discusses Mayo’s focus on safety, service and quality in all areas of cardiovascular surgery.

**Leading with passion**

Hartzell V. Schaff, M.D., leads Mayo Clinic’s cardiovascular surgery department with a passion for patients. He talks to Mayo Magazine about what the future may hold for cardiovascular surgery.
Therapeutic heart-shaped pillows are often given to open-heart surgery patients with hand drawn illustrations of their surgery, courtesy of their surgeon.

Thoralf Sundt, III, M.D., has illustrated an aortic valve replacement and coronary artery bypass on this pillow, using a black felt-tip marker.
A conversation with ...  
Linda Stout Raison

“Thanks for taking that chance.”

By Matthew D. Dacy

It was 9:35 in the morning of Tuesday, March 22, 1955. A 5-year-old girl from Bismarck, N.D., became the first patient at Mayo Clinic to have surgery with a heart-lung bypass machine ... and the second person in the world to survive that procedure.

The outcome on that early-spring morning was far from assured. It was an act of faith for Linda Stout’s parents, who had no other hope for their daughter’s life. It was a bold step for John W. Kirklin, M.D., the 37-year-old surgeon whose team had worked almost three years to prepare for that day.

The Stout family and the Kirklin team met at the crossroads of a major challenge. Doctors could diagnose heart defects and diseases — predicting, for patients like Linda Stout, a difficult and short life. But how could they stop the heart, fix its problems and still keep the patient alive?

There had been many attempts — slowing a patient’s heart by lowering the body temperature or connecting the patient to another person, whose heart supported them both. In Philadelphia, John Gibbon, M.D., had developed a machine to replace or “bypass” the heart and lungs during surgery — but only one patient had survived the procedure.

Dr. Kirklin and colleagues at Mayo Clinic saw potential in Dr. Gibbon’s machine, and they modified the device. It was the ultimate do-it-yourself project. There were no blueprints to follow. They wrote the plans, made the parts and tested the results. By March 1955, the device was ready for use.

The success of her operation helped Linda Stout (Linda Raison after her marriage) enjoy an active, independent life. It also opened a new era in which surgeons and their teams could correct ever-more complex problems. And it positioned Mayo Clinic as a global leader in a new specialty: cardiovascular surgery. Half a century and almost 65,000 procedures later, Mayo remains at the forefront of this field.

In the spring of 2005, Linda Stout Raison and her sister, Barbara Stout, returned to Rochester. They joined the Division of Cardiovascular Surgery in marking the golden anniversary of open-heart surgery. Mrs. Raison shared her thoughts with Mayo Magazine.

What do you remember of your operation?

A group of doctors visited my family the night before surgery. They seemed so tall and handsome. I think one of the doctors had a crew cut. One of them picked me up and held me. They made me feel special.
Were you frightened?
I had a doll with a purple dress, which I loved. Going into surgery, the nurse said she’d have to take the doll for a while and that got me upset, but overall I wasn’t scared. My mother told me that when I woke up, I’d either be with my family or with Jesus — that He loved me even more than they did, and He would always take care of me.

Describe your parents.
They were good people — the salt of the earth, who put the family and especially their children first. My dad was a soil scientist, and my mother was a homemaker. I look like my mom, but I’ve got Dad’s sense of humor.

They understood your condition was serious. How did they cope?
They had a deep faith. I have an older brother, David, and two younger sisters, Marcia and Barbara. I know my folks prayed for us all their lives.

When was your first visit to Mayo Clinic?
When I was an infant, I had severe pneumonia. My parents got me on a plane from Bismarck to Rochester. It’s interesting — my parents weren’t risk takers, but they traveled with a sick baby when flying wasn’t that common. That’s the kind of dedication they had for their family.

So your parents turned to Mayo Clinic when they learned you had a heart problem?
They were persistent. When I was diagnosed with a congenital heart defect, they took me to a lot of doctors, looking for answers. Mom and Dad wouldn’t give up, and they knew Mayo is the place to go. If there’s an answer, Mayo will have it. When I was 5, Mayo said they had a heart procedure that might help me. And we headed back to Rochester.

How was your life after the operation?
Normal, which is the biggest miracle of all. Before the surgery, I got tired very easily. I couldn’t keep up with my friends when we played games. Afterward, I did all the usual things — roller skating and swimming. I still swim. It’s the best exercise. I graduated from Concordia College, taught school and later worked with my husband in his business. These days, I’m a substitute teacher. I love being with kids.

Did you ever need further care at Mayo Clinic?
Not for myself, but I was here with the family when Barb, my sister, had heart surgery in 1978. Actually, her condition was more serious than mine. She had heart failure when she was in junior high school. She came through just fine — more prayers from us and another miracle from Mayo. Barb went on to earn a Ph.D. She’s a research scientist, studying lung disease.

What are your thoughts when you see the exhibits and attend the presentations about the 50th anniversary of cardiac surgery?
In some ways, I had the easy part. I slept through the operation and recovered. My parents were the ones with the strength and faith, and the doctors had the skill. Looking back now, I’m amazed how young Dr. Kirklin and his associates were. Dad and other people called him the ‘Boy Wonder.’

One thing I feel good about is what came from my experience. When I was here in ’78, a nurse told me that after my operation everyone realized that heart surgery patients need a lot of special care, and this led to the development of Intensive Care Units (ICUs) — not only for cardiology, but for other kinds of operations, too. The ICUs have helped a lot of people.

I know Mayo Clinic took a chance on me as their first patient. If I had one thing to say it would be, thanks for taking that chance.
“Pain matters,” says Thoralf M. Sundt III, M.D., a cardiovascular surgeon at Mayo Clinic. “Here, we take pain seriously.”

Mayo Clinic’s cardiac surgical intensive care and step-down units are taking specific measures to ensure that high-touch comfort keeps pace with advancing technology.

Interventions for controlling pain and improving comfort for heart-surgery patients are generated at the Healing Enhancement Program, an interdisciplinary work group with a target goal of pain-free heart surgery. Led by clinical nurse specialists Susanne M. Cutshall and Laura J. Fenske, the group increases its momentum with each passing month. Dr. Sundt serves as practice champion for the group.

“This is the only committee I know of that gains new members every month,” says Dr. Sundt. “Heart surgery will never be entirely pain-free, but we have to set a stretch goal. It’s no good saying that we’re going to make heart surgery as painless as possible. We’ve been saying that for a long time. We want to make it pain free.”

From heart pillows to pain pumps, all measures to provide comfort and control pain are fair game for this group. Break-through insights occur when multiple
professionals come together with a common focus of pain control. For example, when massage therapist Deborah J. Engen noted that patients were experiencing pain and muscle tightness in their lower back after surgery, administrator Brent R. Phillips asked, “What can we do to make that better?” Ms. Engen responded, “If we could raise a patient’s knees and thighs on the operating table, it would tip the hips back and allow the lower back to flatten out and relax during surgery and help avoid the post-operative discomfort.”

Indeed, they could do that — and they are. Dr. Sundt and others are working on incorporating wedges on the operating room table. With the slight elevation of the patient’s knees and thighs, post-operative back discomfort should be relieved. “That’s an insight that we could not have achieved without the combined efforts of this group,” says Dr. Sundt.

The team will assess the effectiveness of this intervention and continue to look for other ways to improve the comfort of each patient. Research is the basis for accepting or rejecting ideas that come through the Healing Enhancement Program. “I’m convinced that the way to make substantive progress in a data-driven institution like ours is through research,” says Dr. Sundt. “We’re continually evaluating these measures before we make a practice change.”
Heart to heart

A sneeze, a cough or even a giggle can cause excruciating pain for patients recovering from heart surgery. For several days following the surgery, many patients are required to perform a routine series of coughing exercises to keep their lungs clear. Saint Mary’s Hospital Auxiliary Group found a way to make this process a little more comfortable. Since 2002, the auxiliary has given red, heart-shaped pillows to all open-heart surgery patients. With more than 2,600 open-heart surgeries performed annually at Mayo Clinic Rochester, the pillow has a broad impact and serves multiple purposes. Held close to the surgical site, it provides relief from the pressures of walking and coughing. Surgeons use the pillow to “show and tell” by sketching surgery procedures directly on the pillow. And after the hospital stay is over and the patient is home, the pillow often becomes a keepsake. “We’ve received many letters of thanks from grateful patients telling us heart warming stories about the pillow,” says Auxiliary Coordinator Susan C. Pronk.

Music and healing

The role of music in recovery from cardiac surgery is being evaluated by the Healing Enhancement Program team. Grammy Award-winning composer and musician Chip Davis, creator of Mannheim Steamroller, brought the gift of music to the cardiac surgery unit. He is working with Mayo to install special surround-sound systems in patient and operating rooms. In this project, nature sounds are mixed with Mr. Davis’s music. In theory, certain nature sounds, such as the singing of birds or the babbling of a brook, impact human emotion in a positive way. The system is designed to surround the patient with sounds that he or she finds personally pleasant and comforting. The patient controls the system with a user-friendly remote control. Brent A. Bauer, M.D., director of Mayo Complementary and Integrative Medicine Program, is working with the Healing Enhancement Program team to design a research protocol to study the effects of this type of music therapy in reducing anxiety and expanding the confined feeling of the hospital room.

“Here, we take pain seriously.”

The surgical team prepares

6:30 a.m. – Pre-operative schedule begins. Team members discuss the case and a final inspection ensures that all supplies and equipment needed for the procedure are in place.

Reviewing the case

A check of all equipment

THANK YOU TO THE CARDIAC SURGICAL TEAMS OF KENTON J. ZEHR, M.D., AND THOMAS A. ORSZLACK, M.D., FOR THEIR COOPERATION AND WILLINGNESS TO ADD ANOTHER PERSON (THE
**Pain control**

Before Mayo Clinic makes major decisions to adopt new pain management technologies in the cardiac surgical area, the Healing Enhancement Program group puts the equipment through study trials. For example, Dr. Sundt and Gregory A. Nuttal, M.D., Department of Anesthesiology, are studying pain pumps that inject local anesthesia inside the body, directly along the incision line. The tiny intravenous-like tubing is internal and is connected to a small, patient-controlled pump. When the patient feels post-operative pain and pushes the button on the pump, a dose of pain medication is released directly to the surgical site. Among other factors, the study will compare the level of pain relief and patient satisfaction with different types of pain pumps.

**From aviation to heart surgery**

 Mayo Clinic is poised to lead the health care industry in the study of new aspects of patient safety in the operating room and intensive care units. Joining the Cardiovascular Surgery Division is Douglas A. Wiegmann, Ph.D., former chair of aviation safety at the University of Illinois. Supported by a four-year award from the National Institutes of Health, Dr. Wiegmann is pursuing his interest in medical safety at Mayo.

By combining the energy and clinical expertise of the cardiovascular surgery team with the knowledge and insights of a national safety expert, the Mayo team will study safety aspects of cardiovascular surgery. The project will focus on areas such as equipment and human interfaces, human-to-human communication, and error identification and prevention.

“**It’s no good saying that we’re going to make heart surgery as painless as possible. We want to make it pain free.**”
Dr. Wiegmann is well known for his research and writing on human-error analysis of commercial aviation accidents. The recruitment of Dr. Wiegmann represents the same Mayo tradition of collaboration used to perfect the heart-lung machine — teams of clinical experts joining with subject matter experts to solve complex issues.

Building on heritage
Since its inception, Mayo Clinic’s Division of Cardiovascular Surgery has maintained a preeminent position as a patient-focused, academic department whose mission is to serve the patient and advance the science.

In 1957, Mayo opened one of the first intensive care units in the world, developed in response to the unique needs of open-heart surgery patients. Today, with more than a half century of experience, Mayo Clinic’s cardiac intensive care and step-down units continue to address the complex needs of open-heart surgery patients. The specialty is now so advanced that many cardiac surgery patients do not require an intensive care unit.

Philanthropic support has always been an essential component to this work. With the dedication of volunteers and support of benefactor gifts, Mayo continues strong in its mission — “to provide the best care to every patient every day, through integrated clinical practice, education and research.”

Pushing the

By Michael J. Dougherty
Celebrating 50 years of development of cardiopulmonary bypass and cardiac surgery at Mayo Clinic in May brought about many discussions about how both the care of patients and the science have developed. It also prompted leaders to talk about what new frontiers, discoveries and ways to care for patients will emerge in the next 50 years.

Mayo Magazine spoke with Hartzell V. Schaff, M.D., chair of the Division of Cardiovascular Surgery at Mayo Clinic Rochester, about how Mayo Clinic has been able to maintain its level of excellence through the past 50 years and what the future might hold for cardiovascular surgery:

The celebration of the 50th anniversary of cardiopulmonary bypass at Mayo Clinic showed that a culture of excellence and
innovation did not stop at the point of discovery but has continued through the work of many individuals over the years. How has Mayo created a culture to do this?

Dr. Schaff: Mayo has a special culture. An example of how this impacts leadership is succession planning. In other academic medical centers, change in division or department chairs often leads to upheaval, but at Mayo, careful preparation for leadership change and limited tenure allows renewal that comes with change and minimizes disruption.

Cardiovascular surgery is highly individual, and cardiac surgeons tend to be independent types. Although we depend on a team, at the end of the day, it is the surgeon who has to speak with the family about the good or bad news. Most other institutions have a more hierarchical structure in which younger surgeons work under the direction of the chief, but this is not the case at Mayo. Here, each surgeon can develop his or her career to the fullest, so when leadership positions change, there are many well-qualified colleagues who can step in.

How did you decide to go into cardiac surgery?

Dr. Schaff: I entered cardiac surgery because I thought it would be exciting and rewarding and because I could imagine waking up each morning looking forward to the challenges of the day. I like working...
directly with patients. Working at Mayo, surgeons have immediate advantages in that patients have thorough preoperative evaluations and have benefited from consultation with colleagues in cardiology and other medical specialties. In addition to the benefit of state-of-the-art diagnostic studies, patients have developed a relationship with other physicians, and this eases the discussion of major surgery and the attendant risks.

**What advances and new developments are we likely to see in cardiac surgery?**

Dr. Schaff: Look at the first 50 years; the earliest operations were all for congenital heart problems, and I doubt those pioneers would have predicted the scope of our cardiac surgical practice today. I think it is safe to expect progress in several areas:

- Surgical procedures to address ever-more complex cardiac conditions.
- Care for patients who had cardiac surgery years or even decades ago. Examples are patients with repaired congenital heart defects who may later develop valvular or coronary artery disease.
- Valve procedures — innovations to preserve a patient’s natural valves and the use of prosthetic replacements that are both durable and free of complications such as embolism.
- New anticoagulants for use in patients with artificial heart valves and new strategies for managing these medications.
- Mechanical devices and the potential use of animal hearts to help alleviate the shortage of donor hearts for transplantation.
- New initiatives to focus on patient safety and comfort.

**There seems to be a steady evolution of knowledge and procedures becoming more routine. How do you see this continuing?**

Dr. Schaff: Mayo Clinic is a special place. We deal with more unique and difficult problems in cardiovascular surgery than any other medical center I know. We also teach and do research here, so the environment quite naturally develops innovations and new ideas that improve our practice and are disseminated through our trainees. We have an ideal mix of very smart, talented young staff and experienced senior surgeons. Further, we realize that we have a special responsibility to build on the work of Mayo surgeons who were true pioneers in our specialty. Our commitment and challenge is not only to continue the tradition of excellence, but to leave the practice in better shape than when we started. From Dr. John Kirklin’s first operation using cardiopulmonary bypass in 1955, Mayo Clinic surgeons have developed an extensive number of operations, devices and patient-care protocols, which enable us to serve more patients and treat ever-more complex conditions. We intend to keep pushing the frontiers of cardiovascular surgery forward — so that today’s breakthrough is tomorrow’s mainstay of care.
**About the heart**

Approximately 100 times a minute, 100,000 times a day and 36.5 million times a year, your heart is keeping the beat. It is a magnificent pump that works tirelessly without ever stopping to rest. With such a workload, it is easy to appreciate how problems can occur. Below are descriptions of a few common problems of the heart.

**For additional information**

To learn more about the heart and ways to keep your heart healthy, visit MayoClinic.com. Under Disease and Condition Centers scroll to Heart.

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**Defective valves**

Your heart has four valves, which open and close to keep blood flowing in the right direction. Any valve can become narrowed (stenosis) or leak. Defective valves may allow blood to flow backward and valves may need to be repaired or replaced.

**Narrowed coronary arteries**

The heart muscle receives its supply of blood from the right and left coronary arteries and their branches. Fatty materials can build up in the coronary arteries and cause them to become narrowed. As a result, the heart muscle doesn’t receive enough blood, causing angina (chest pain) or shortness of breath. Sudden complete blockage can lead to a heart attack.

**Heart wall thickening and enlargement**

The wall thickness of the left ventricle — the heart’s main pumping chamber — is about 1 centimeter. In people with hypertension, the thickness can increase 30 percent to 100 percent. This condition, called left ventricular hypertrophy, causes an enlarged heart and may interfere with the pumping action of the heart. Chamber walls may also become severely thickened in a heart muscle disease called hypertrophic cardiomyopathy. See page 44 for a complete story on this condition.

**Aneurysms**

A bulge or weakness in the wall of the heart or one of its arteries is called an aneurysm. Treatment of an aneurysm depends on its size and location.
In the first months following coronary-bypass surgery at Mayo Clinic in 1975, Al Maser thought life as he knew it was over. He wondered how he would manage the three banks he owned, support his young family and care for his aging parents.

Coronary artery bypass graft (CABG) surgery was still relatively new in 1975. The first CABG was performed at Mayo in the late 1960s. Unlike today, in 1975 there were few dismissal instructions and no cardiac rehabilitation program after discharge from the hospital. Mr. Maser’s physician, Robert L. Frye, M.D., gave him some simple advice, “Take an aspirin a day and walk as much as you feel you can.” He took this advice literally to heart.

For almost three decades, Mr. Maser has walked four miles a day, 28 miles a week and about 1,000 miles a year. It’s been 30 years since the surgery. “I’ve worn out a lot of shoes, but I’m still here,” he says. His dog, Copper, is a faithful walking partner. “He’s been wonderful for me,” says Mr. Maser. “He stays with me all the time, and he’s a great listener.”

Recently Mr. Maser and his wife, Delores, returned to Mayo Clinic to meet with Shukri F. Khuri, M.D., the surgeon who performed Mr. Maser’s coronary-bypass surgery. Dr. Khuri, now a professor of surgery at Harvard Medical School and chairman of the National Surgical Quality Improvement Program, returned to Mayo as a visiting professor in 2005, and he attended the 50th anniversary of the first open-heart operation at Mayo Clinic.

“After the surgery I felt like I wouldn’t be able to resume my life,” said Mr. Maser. “Periodically I’d go back to Dr. Frye, and he’d reassure me that I could live an active, normal life. Eventually I came to believe him.”

Over the years, Dr. Frye has guided Mr. and Mrs. Maser through several illnesses. “You have to have confidence, faith and trust that your primary doctor will put you in the right direction — with whatever you need. Having the reassurance that Dr. Frye was there for us has made all the difference,” says Mr. Maser.

To honor Dr. Frye, and in gratitude for all that he has meant over the years, the Masers have made a major contribution to Mayo’s General Clinical Research Center (GCRC). The GCRC, supported by a grant from the National Institutes of Health (NIH), provides clinical investigators with specialized staff,
laboratories and an environment to conduct patient-based research. The GCRC and NIH are partners in the important work of translating knowledge gained through basic research into the development of new approaches to diagnose, treat and prevent diseases and disabilities. (See GCRC story, pg. 26)

“It is fundamental to translate what we learn in the basic sciences to actual patients and vice versa,” says Dr. Frye. “This most generous gift from the Masers is critical in Mayo’s commitment to support the GCRC, and it is deeply appreciated.”

In addition to their financial support of Mayo Clinic GCRC, the Masers also support healthy living in their home community of LeMars, Iowa. By funding the construction of a beautiful 3.4-mile walking trail, they have inspired the community about the health benefits of walking. The sign at the start of the Maser Recreational Trail reads, “In nature, man is at his best — physically, mentally and spiritually,” a message that embodies the Masers’ belief and the spirit of the project.

Heart problems did change life for the Maser family. It took the support of his close-knit family and the expertise of Mayo Clinic staff to help Mr. Maser realize that he could live an ordinary life. But the Masers have turned it into an extraordinary life. Transforming their crisis into opportunity, they now give their time, talents and financial support to projects that support healthy people and a healthy environment.

“Health is the basis of it all,” they say in unison. “If we are healthy we can be active — it just takes us longer to do less at our age,” says Mrs. Maser with a wink.
When people of different geographies work together, the incredible can happen. Individual areas of excellence combine to create broad new assets. Fresh perspectives emerge. And obstacles of extraordinary complexity are surmounted with the strengths of the alliance.

This exciting scenario has become the reality for transplant medicine at Mayo Clinic. Building on four decades of pioneering work, including the nation’s first heart-double lung-liver transplant and procedures that make transplantation safer and available to more people, physicians and scientists across Mayo’s three campuses are bringing their distinct strengths together to better serve patients and continue an inspiring trend of innovation.
Changing lives and creating hope
THROUGH MAYO CLINIC’S TRANSPLANT PROGRAM

By Matt Derechin

Teamwork across Mayo Clinic’s transplant programs has achieved the remarkable for Susan Clancy of Scottsdale, Ariz. A small-business owner and mother of two, whose life was slipping away because of polycystic kidney disease, Mrs. Clancy received coordinated care at both the Arizona and Jacksonville campuses, which culminated with a kidney-liver transplant last November.

Today, with her quality of life almost fully restored, Mrs. Clancy says the desert heat doesn’t bother her, and when she looks at the nighttime sky, the stars seem to shine brighter than before. “My experience was incredible,” Mrs. Clancy says. “Within two weeks of my first visit to Mayo, they had done more for me than anyone had done in two years. Both coordinators (in Jacksonville and Arizona) were right on top of everything.”

Mrs. Clancy’s story is just one of many from Mayo’s transplant programs, which are increasingly functioning as one. Together, they form a program with a unique ability to serve patients and advance transplant medicine, says Thomas Gonwa, M.D., a transplant physician at Mayo Clinic Jacksonville.

“Each site has its own strengths,” Dr. Gonwa explains. “In Jacksonville, it’s availability of organs and short wait times. The William J. von Liebig Transplant Center in Rochester has tremendous strengths in research, as well as a large living-donor transplant program. Arizona also has a large living-donor program and is growing very rapidly. When you combine all three, you have one transplant program that can serve all patients.”

Waiting for a new life

In every solid organ category, wait times at Mayo Clinic Jacksonville are several months — even years — shorter than national medians. Leading the way is the liver transplant program, which despite being the nation’s largest, has the shortest median wait time in the country — 1.4 months, compared to a national average of 45 months.
The short wait times at the Jacksonville campus are a result of several factors, says Cesar Keller, M.D., a transplant medicine physician there. Donor organs are more available in the Southeast, compared to other parts of the country, in part because of the effectiveness of organ procurement agencies but also because of increased public awareness of the need for organs, he says.

“A significant number of donors come through education and awareness,” says Dr. Keller. “Many times when a difficult transplant procedure is performed, the press picks up on it, and that creates an environment of awareness.”

Adding to these advantages, the Jacksonville staff has become especially adept at working with organs that are not necessarily “perfect,” Dr. Keller says. “Our experience has shown that you can take organs that are not perfect, but usable, and under the right circumstances they can work very well.”

An example comes from the experience of Brittany Wise, now a 19-year-old college sophomore living in Mondovi, Wis., who received a lung transplant at the Jacksonville campus in 2002. Prior to her transplant, Ms. Wise had difficulty walking stairs or even across campus to class. The problem was the result of radiation therapy she received for metastatic Ewing’s sarcoma, which had spread to her lungs.

Although the radiation killed the cancer, it caused progressive scarring that could only be solved by a lung transplant. She was placed on the transplant list at Mayo Clinic Rochester, but as her condition worsened, her physician team recommended she transfer to Jacksonville.

“The people in each program, liver transplant, heart transplant and so on, work with each other quite a bit,” says Nishith Patel, operations administrator for the William J. von Liebig Transplant Center at Mayo Clinic Rochester. “We share protocols, and we also send patients to each other. Some patients who could not wait for a transplant here have been sent to Jacksonville, and some have been sent from there to here.”

Ms. Wise moved with her mother to an apartment in Jacksonville, and seven months later she received a lung transplant. Though the organs were a good match for Brittany, they weren’t perfect, Dr. Keller says. They had to be trimmed to fit her frame.

Now, no one would know the difference. Ms. Wise says her post-transplant procedure was nearly complication-free. In addition to saving her life, the operation restored a key component for enjoying it —

From untreatable to treatable

Matching Ms. Wise’s dramatic transformation are results from research collaborations that are transforming the treatment of deadly diseases. One of the most exciting discoveries in recent years is a therapy for cholangiocarcinoma, cancer of the bile duct, which can occur in people with liver disease. The bile duct drains the liver, and the scarring and inflammation that accompany liver disease can also result in cholangiocarcinoma, a uniformly fatal disease for which there was no successful treatment.

But a decade ago, Mayo physicians began working on a strategy to change that, says Gregory Gores, M.D., a Reuben R. Eisenberg Professor of Medicine and Physiology and the chair of the Division of Gastroenterology and Hepatology at the Rochester campus. Dr. Gores took note of the advances Leonard Gunderson, M.D., now at Mayo Clinic Arizona, pioneered at Rochester by treating bile duct cancer with radiotherapy and combining radiotherapy with liver transplant.

The Liver Transplant Program at Mayo Clinic Arizona achieved a significant milestone in June 2005 when surgeons performed the 50th living-donor liver transplant since the program began in April 2001. In this procedure, a healthy person donates 60 percent or more of his or her liver to a person in critical need of a liver transplant. Remarkably, the livers of both the donor and the recipient regenerate to their normal size within weeks. (The liver is the body’s only internal organ that regenerates to its original size.)

The 50th living-donor procedure took place at Mayo Clinic Hospital in northeast Phoenix, Ariz., on Thursday, June 16, when a 42-year-old Benson, Ariz., man, Wayne Perales, donated part of his liver to his cousin from Needles, Calif.

Both patients were reported to be recovering well following the combined nine-plus hours of surgeries. The transplant surgical team was led by David Mulligan, M.D., and Adyr Moss, M.D., the Mayo surgeons who have performed all living-donor liver transplants since the inception of the Arizona program. The advantage of living-donor liver transplantation is that the recipient does not spend time on a waiting list and that the surgery can be scheduled when both donor and recipient are in optimal health, contributing to a more favorable outcome.

Mayo Clinic Arizona ranks number one in the state and seventh in the nation for living-donor liver transplantation. Adult-to-adult living donor liver transplants are now growing at a greater increase than are liver transplants that use deceased-donor livers. This is significant because the number of patients awaiting transplantation greatly exceeds the supply of deceased-donor organs. More than 17,000 people currently are on the waiting list for a liver in the United States, yet fewer than 6,000 deceased-donor livers became available for transplantation in 2004.
“There was no therapy for these patients at the time, and I thought perhaps by combining therapies we can offer them something,” Dr. Gores says. “But I was relying more on intuition than anything else.”

Through further collaboration with colleagues across several disciplines and campuses, the Mayo team developed a therapy that has transformed treatment of the disease. A 2004 follow-up study of their protocol, which uses radiotherapy and chemotherapy, followed by a transplant, showed that 80 percent of patients are alive after five years.

Because the disease is relatively rare, few centers across the United States offer the treatment today. But, largely because of Mayo’s emphasis on collaboration, the treatment is available at all three campuses.

**Beneficial differences**

If there is a single area of transplant medicine that benefits most from Mayo’s regional diversity, it may be clinical studies or patient-based research. The different strengths at each Mayo campus are coming together to create innovative clinical studies that also have applicability to all transplant patients.

A case in point is a recently launched clinical study in Jacksonville and Scottsdale that aims to improve immunosuppression, a key strategy for preventing organ rejection, in kidney transplant patients and the longevity of transplanted organs, says Raymond Heilman, M.D., of Mayo Clinic Arizona.

“We are still having trouble keeping transplanted kidneys functioning for more than 10 to 20 years,” says Dr. Heilman. “One of the reasons is that progressive scarring of the kidney occurs. There are probably multiple reasons for that, but one of the concerns is the immunosuppression drugs.”

To address that concern, Drs. Heilman and Gonwa have designed a study evaluating an immunosuppression regimen that pairs an antibody — rather than steroids — with a newer drug that may have less impact on the kidneys.

The study brings together two distinct strengths of both campuses. Mayo Clinic Arizona has extensive experience with steroid-avoidance immunosuppression, and the kidney transplant program in Jacksonville continues to increase in size.

Additionally, holding the study at both campuses will improve recruitment, allowing the team to reach its goal of 200 patients faster and evaluate a more diverse sample of participants, Dr. Gonwa says.

“Arizona has a much larger Native American and
Hispanic population, whereas we have a large African-American population,” Dr. Gonwa says. “So between the two of us, we are able to include participants from several races and ethnicities and produce results that are applicable to a broad spectrum of patients.”

For additional information


For information about a new heart-transplant program at Mayo Clinic Arizona, see p.45

A league of their own

Researchers in Rochester are leading medicine’s search for better transplant solutions.

Research at the William J. von Liebig Transplant Center at Mayo Clinic Rochester encompasses everything from cellular mechanisms involved in organ rejection to the nation’s only federally funded program in xenotransplantation.

“We have 100 members in our transplant center, and nearly all of them participate in research,” says Michael Charlton, M.B.B.S., director of transplant research at the von Leibig Center.

Projects include collaborations between research scientists and physicians, and these joint activities lead directly to patient care innovations, such as positive crossmatch kidney transplants, Dr. Charlton says.

Developed in 2001, the procedure answered an urgent need in kidney transplantation. Approximately 10 percent of patients needing kidney transplants have elevated antibody levels, a condition that makes organ rejection almost certain.

As a result, dialysis was the only option for these patients, and, a less-than-ideal one at that, says Dr. Charlton. “The average life expectancy on dialysis is about five years, so, in essence [positive crossmatch kidney transplant] is a life-changing and saving procedure,” Dr. Charlton says.

Its creation is a classic example of bench-to-bedside research at Mayo. Building on basic science discoveries about antibodies that cause organ rejection, Mark Stegall, M.D., and James Gloor, M.D., led a team of physicians and researchers who developed the positive crossmatch technique.

The procedure begins with plasmapheresis, a dialysis-like technique to remove the antibodies that cause rejection, followed by medicines specifically targeting cells that make the antibodies. Removal of the patient’s spleen, which is partly responsible for antibody production, occurs if rejection develops. Research to date has shown that survival rates are comparable to other living-donor kidney transplants.

More remarkable successes are on the horizon, says Dr. Charlton, citing increasing collaboration in transplantation research across Mayo’s three campuses. “With so many patients, physicians and scientists involved in research across our three sites, we can answer questions that other places cannot or would not address,” he says.
David Deason’s transformation, during the fall of 2002, sounds like something from a science fiction novel. Almost overnight, David, then 39 years old and an entrepreneur from Dallas, had become listless and disoriented. His eyes glowed yellow, and his weight dropped and then increased precipitously from 200 pounds to 155 pounds and then up to 250 pounds.

But it wasn’t a plague from outer space that was ravaging David’s body; it was acute liver failure. And though his local doctors could diagnose the problem, they couldn’t fix it, saying his poor condition made him an unsuitable candidate for a liver transplant.

So, David’s wife, Jill, and his father, Darwin, began an international search to find a place that would perform the procedure. As chairman of the board of Affiliated Computer Services, a Fortune 500 company that employs more than 50,000 people, Darwin Deason was prepared to spare no expense to save his son. But money wasn’t the issue, he says. The problem was finding a place that was willing to take a chance on David, should a matching organ become available.

Increasingly, the Deasons began to believe that their best hopes lay on another continent, but a physician friend referred them to Mayo Clinic Jacksonville. Though the Jacksonville program was only four years old at that time, it had already become one of the nation’s largest programs, and its median wait time was the shortest in the country.

After a brief discussion with Jeffery Steers, M.D., chair of the Department of Transplantation, David was sent by air ambulance to Jacksonville, where he was evaluated and placed on the transplant list. “I remember vividly David being put on that ambulance plane,” Darwin Deason says. “He was basically dead; everything had shut down except his heart, and machines were the only thing keeping him alive.”

Though the Deasons now had a medical team willing to perform a transplant on David, their first days in Jacksonville were fraught with worry. At least twice in the first five days, they received late-night calls from the medical staff suggesting that David might be entering his final hours. Then, about the fifth day into David’s stay, Dr. Steers gave them a frank assessment of David’s condition.

“I told them that if we didn’t have a donor within the next 24 hours, we might not be able to do anything for David,” Dr. Steers says. “One of the problems with liver failure is the brain begins to swell. If the swelling gets past a certain point, it’s no longer reversible, and there’s nothing we can do, even if we have a liver to transplant.”

Today, the conversation can only be seen as prophetic, because a matching organ for David appeared just hours later. A helicopter carried Dr. Steers through storm-swept skies to Tampa, Fla., where he harvested the organ that his colleague, Christopher Hughes, M.D., transplanted at Mayo Clinic Jacksonville, less than two weeks after David’s liver failed.

“It seemed like divine intervention, and, at the same time, it was a morbid feeling, knowing that someone’s death would save my son,” says Darwin Deason.

Life’s lessons gained

Today, no one would guess that David Deason came so close to death. His face is flush with color, and he leads an active, busy life that is nearly free of any health-related restrictions.
David Deason (right), nearly three years after a successful liver transplant surgery, with his wife, Jill, and father, Darwin Deason.
He has almost no memories of the two weeks before his transplant surgery, and the weeks afterward are blurry, as well. He remembers his wife, constantly at his side during his three-month stay at St. Luke’s Hospital in Jacksonville. But one of the defining moments in his stay came during a conversation with Dr. Hughes.

“Dr. Hughes told me that he thought that, given the condition I was in, I must have been spared for a reason, and that has stayed with me,” David Deason says. “It has really made me appreciate life much more.”

This new perspective has opened the door to a new life for David and Jill Deason, who decided shortly after returning from Jacksonville that they wanted to grow their family. A year later, they traveled to Russia to adopt twins. “Even the adoption of our girls seems like part of some kind of divine intervention,” says Jill Deason. “Everything worked out perfectly, and now we have these two beautiful children with whom to share our lives.”

It’s part of a transformation that pulls constantly at the heartstrings of David’s father. “I’ve seen their family resurrect, right before my eyes, and I get choked up about it just about every time I see David.” Darwin Deason says. “Dr. Steers and his team have done that, and that’s why their work is so rewarding to families like ours.”

Epilogue: a better tomorrow

The Deasons’ experience with David’s transplant has made them passionate about improving transplantation for people throughout the world. Last year, Darwin Deason pledged his ongoing support for research in liver transplantation at Mayo Clinic Jacksonville, and his first gift is funding two important projects.

One project involves researchers sifting through years of patient data to learn more about the complications that result from using extremely small liver grafts in adult transplant patients. The Jacksonville staff has pioneered the use of these grafts, and the research will help them perform procedures with greater success and less post-operative complications.

The second project addresses the problem that was present during David’s illness. Swelling of the brain, or brain edema, is a common side effect of chronic liver failure and its most lethal complication. Justin Nguyen, M.D., a transplant physician, is studying this syndrome in collaboration with members of the Department of Neuroscience in Jacksonville.

Darwin Deason’s gift has already spurred exciting progress. The funds enabled the brain edema team to hire a post-doctoral fellow, develop a mouse model for clarifying the syndrome and identify a promising treatment target. With this progress, the team is now in a strong position to apply for long-term funding from the National Institutes of Health, which, along with funding from the Deason Foundation, will allow the research to continue.

For Darwin Deason this progress is reason for optimism, but he sees even greater hope in Dr. Steers’s long-term vision for liver transplantation.

“We can remove 10 percent of a liver laparoscopically from a live donor, and in about 14 days the graft will grow to a size that is suitable for transplantation,” Dr. Steers says. “But, currently, this isn’t an option for patients with acute liver failure because of the brain swelling that occurs — 14 days is too long of a time frame.”

A method for slowing or preventing swelling in the brain would revolutionize the treatment of liver failure and liver transplantation, Dr. Steers says. For Darwin Deason, it represents an extraordinary opportunity, one that almost seems preordained.

“This could mean that no one should have to die waiting for a living transplant ever again,” Darwin Deason says. “It’s so revolutionary to me, and as we talked about it, I thought ‘maybe this is what is intended by [David’s] experience.’ I’ve been fortunate to do well financially, and I was surprised to learn what I could help accomplish just by helping Dr. Steers and his team pursue their ideas.”
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Advancing medical science through clinical research

Two Mayo programs lead the way

By Jacquelyn Johnson Gosse

Modern science and medicine have brought incredible advancements in patient care over the years — discovery of cortisone to relieve the pain of arthritis, insulin therapy for diabetes, artificial joint replacements, magnetic resonance imaging (MRI), organ transplantation and much more.

None of these medical improvements could have taken place without the thousands of clinical research studies on human illness in search of improved treatments, therapies and medicines. Mayo Clinic’s logo depicts three interlocking shields representing the ongoing commitment to excellence in patient care, medical research and medical education. In the tradition of teamwork, at Mayo research discoveries are “translated” into new and more effective ways to fight disease.

Two programs at Mayo measurably advance the clinical research that directly leads to practice improvements at Mayo and beyond.

Center for Patient Oriented Research

Mayo Clinic’s Center for Patient Oriented Research (CPOR) in Rochester is designed to help those involved in clinical research conducted with human subjects. CPOR provides consultative and support services vital to the efficient conduct of clinical research. These include graduate education in clinical research training, the Clinical Research Awards Program, recruitment of volunteers and training for research coordinators. The center’s statistical and epidemiological consultants enable more investigators to design, conduct and analyze their own studies. Biostatisticians and epidemiologists from the Department of Health Sciences Research answer questions regarding hypothesis formulation, study design, sample size and choice of analysis and interpretation and publications.

CPOR works collaboratively with the General Clinical Research Center (GCRC) to
support clinical research at Mayo. CPOR trains investigators to do research and the GCRC enables investigators to perform research.

**Mayo Clinic General Clinical Research Center**

Advertisements recruiting people to participate in a research study at Mayo Clinic General Clinical Research Center (GCRC) are common in Rochester-area media. The GCRC hosts more than 200 research studies, also referred to as clinical trials, each year.

Mayo’s inpatient research facility at Saint Marys Hospital’s Domitilla Building and outpatient research facilities at Rochester Methodist Hospital’s Charlton Building make up one of the largest and oldest clinical research centers in the United States.

Mayo Clinic GCRC is described by a senior National Institutes of Health official as the “crown jewel” among the 78 such research facilities it supports throughout the United States. In addition to the efficiencies gained and dollars saved by shared laboratories, equipment, personnel and resources, the researchers are able to collaborate and share intelligence.

“Clinical research allows us to take what is learned in the laboratory and translate it into treatment for patients,” says K. Sreekumaran Nair, M.D., Ph.D., an endocrinologist and director of Mayo Clinic’s GCRC. “We are grateful for the role that private philanthropy has played in the growth of the GCRC — including generous support from the Eisenberg Foundation, Conrad N. Hilton Foundation, Grainger Foundation, Bea and Eli Rosenman and others.”

**On the next two pages, take an inside look at some of the fascinating research conducted daily at Mayo Clinic GCRC.**
**Precision matters**

Precision and accuracy are the corner stones of research. The GCRC is ever conscious of these factors as studies are performed on the unit. Stop watches are used to insure that blood draws are drawn precisely on time. One particular study examines the effects of aging and hormone replacement. In this study participants are slated to have 105 blood draws in one day. This equates to a blood draw every five minutes. A special intravenous line (IV) is placed to allow for repeated blood draws with minimal discomfort to the patient. Study protocols have detailed documents — with information on exact times that the volunteers can eat, receive medications, sleep and use the restrooms — that all study participants follow.

**Metabolic kitchen**

Researchers conducting trials on topics such as low-salt/high-salt diets require study participants to eat specific diets. To ensure that protocols are followed, staff in the GCRC metabolic kitchen weigh, prepare and cook each meal according to study guidelines. The piece of bread added to the top of the sandwich ensures that it weighs exactly the amount directed. The kitchen staff even makes “to-go” bags for study participants to eat at home.

**Altitude tent**

A plastic tent with low levels of oxygen simulates conditions of greater than 14,000 feet above sea level, which is necessary to conduct studies such as altitude-induced anorexia (loss of appetite in high altitude) and high blood pressure in the lungs (hypoxia induced pulmonary hypertension). Pulmonary edema is a life threatening condition that reduces the ability of the lungs to transfer oxygen from the air spaces into the blood, caused by alterations in the ability of the lungs to regulate water. One way to challenge the lungs in healthy subjects is to expose them to low levels of oxygen (hypoxia). Bruce Johnson,
Ph.D., Eric Snyder, Ph.D., and their team use a “hypoxia tent” in the GCRC to test the abilities of the healthy lungs to regulate lung water.

**Young? Healthy? Exhausted?**

Virend K. Somers, M.D., Ph.D., and his team are examining the link between normal and disturbed sleep and heart and blood vessel disease. Some of their findings include that healthy young subjects have diminished endothelial (the cellular lining of blood vessel walls which protects the blood vessels and prevents them from tightening) function in the early morning after waking. The magnitude of endothelial dysfunction in the young healthy subjects in the morning was similar to that seen in people who smoke.

**No smoking at Mayo Clinic**

Because Mayo Clinic is a non-smoking institution and due to the obvious health risks associated with second-hand smoke, researchers were perplexed on how to conduct nicotine-related studies. They explained their predicament to a Mayo Clinic facilities engineer who said he would think about it while he was on vacation. He returned with an innovative solution — an “ice shack”-type collapsible Plexiglas booth that is vented outside so the smoke doesn’t enter the hospital.

**Liver disease and driving**

The driving simulator computer system tests patients with liver disease and confusion (encephalopathy) secondary to their liver failure. This provides a practical way to evaluate the mental status of these patients and possibly their driving skills. Researchers hope to use the simulator as a tool to measure recovery after therapy such as liver transplantation and artificial liver therapy.
At age 43, Roderick H. Cushman suffered a major heart attack. Married and the father of two young sons, “I was at the height of my career and very competitive,” he says. “I enjoyed the fast pace of my business. The heart attack came out of the blue, and life was never the same.”

Treated first in a local hospital, Mr. Cushman was fortunate to have a cousin who urged him to see Robert L. Frye, M.D., a cardiologist at Mayo Clinic Rochester. “Dr. Frye and Mayo Clinic teamwork were a blessing in my life,” Mr. Cushman says.

And Verena Cushman says of the physician who has helped guide her husband’s health care for two decades: “He is an amazing man.”

Within a few years of being treated for a heart condition, Mr. Cushman was back at Mayo, diagnosed with cancer of the larynx. He is grateful to his surgeon, Bruce W. Pearson, M.D., who, he says, “left me with a voice.” A second heart surgery was necessary in 1993, when he had a double bypass to correct blockages.

“Treatment for his heart condition was important,” Verena Cushman says. “And he also changed his life, got out of a stressful business and improved his diet.” Mrs. Cushman is a native of Germany who came to the United States at the age of 20. She later met her future husband — a lifelong New Yorker — in Munich, Germany.

“We are very fortunate for several reasons,” Verena Cushman says. Both of the Cushmans’ sons, Stefan and Christoph, live with their families near their parents’ home. They have taken over the family’s real estate business, and Mrs. Cushman clearly enjoys having her children and grandchildren nearby and spending time with them.

Dr. Frye has guided Mr. Cushman’s health care for 30 years. He has not only given excellent medical advice but also made sure that Mr. Cushman returned actively to
business and other activities. “Dr. Frye saved my life more than once,” says Mr. Cushman. “I would like to support Mayo and his research.”

Philanthropy is important to the Cushmans. “We feel an obligation to give back, to return what we have been entrusted with,” says Mr. Cushman. In gratitude for the care Mr. Cushman has received at Mayo Clinic, the Cushmans have provided generous support. Their recent gifts have supported research in cardiovascular disease and the Center for Patient Oriented Research (CPOR). Dr. Frye directs CPOR, which provides assistance to staff conducting clinical research at Mayo Clinic Rochester. (See story on page 26.)

By supporting CPOR and cardiovascular research, the Cushmans honor their friend and physician, and, at the same time, encourage other Mayo doctors to undertake the clinical research that enables Mayo to provide the best possible care to all patients.

“Dr. Frye has dedicated his entire life to helping his patients and the medical profession. I enthusiastically support his excellent research work,” says Mr. Cushman.

For additional information about the Center for Patient Oriented Research, go to www.mayo.edu, and type “CPOR” in the search box.
Lenore MacPhee Fogarty, who grew up in Northfield, Minn., chose her career when she was 7 years old. She was determined to be a nurse and, furthermore, she would do her training 50 miles south at Saint Marys Hospital in Rochester. Her resolve was the result of an accident that severed the tip of her left index finger. Fortunately, two of her mother’s friends — both nurses in training at Saint Marys Hospital — were visiting. They swung into action, retrieved the disengaged part and rushed Lenore to the hospital, where a doctor successfully repaired her finger.

“They were very caring, they knew exactly what to do,” says Mrs. Fogarty. “From that point on, they were my idols. I planned all my classes in high school around chemistry, biology and the courses I would need to train at Saint Marys Hospital.”

This vivid episode not only sealed Mrs. Fogarty’s professional life; it also helped launch her lifelong loyalty to Mayo Clinic, a commitment she shares with her husband of 55 years. John and Lenore Fogarty have been patients at Mayo Clinic Rochester for many years and more recently at Mayo Clinic Arizona. They moved to Tucson in 1992 on the recommendation of one of Mrs. Fogarty’s nursing-school roommates from Saint Marys Hospital.

Mr. and Mrs. Fogarty, members of The Mayo Legacy, have made plans in their will to leave a generous portion of their estate to Mayo Clinic. In 2005, they also made a touching gift to support cancer research at Mayo Clinic Rochester in honor of Mrs. Fogarty’s physicians, Heidi Nelson, M.D., and Harry J. Long, M.D.
Mr. and Mrs. Fogarty met at one of Minnesota’s most celebrated events — the St. Paul Winter Carnival. John, a native of St. Paul, Minn., was a member of the King’s Guard, and Lenore was the Queen of Dakota County. It was a fairy tale beginning to a long, eventful marriage, rearing two children and traveling extensively. They lived in Inverness, a suburb of Chicago, Ill., during the nearly 40 years that Mr. Fogarty worked for the forest products company Weyerhaeuser. (At a Mayo Legacy event they hosted in Tucson, one guest wrongly assumed that Mr. Fogarty was a Mayo physician. Mrs. Fogarty stepped in to correct the error. “He is a doctor of logs,” she said.)

Throughout her life, Mrs. Fogarty has continued to be a woman of resolve. In the 1960s, after taking a few trips with her husband and friends to Ajijic, near Guadalajara, Mexico — and reading an article about Puerto Vallarta — she enticed Mr. Fogarty to visit the remote, sleepy seaside village. Before long, they were building a home there overlooking the Pacific Ocean. “I thought she had lost her mind,” says Mr. Fogarty. He soon surrendered to her good judgment. Ever since, they have spent part of each year in Puerto Vallarta. Although Mrs. Fogarty’s health did not permit her to visit in 2005, she insisted that her husband go. “She’s a tiger,” says the six-foot-five-inch Mr. Fogarty of his diminutive spouse.

If you move to take advantage of a new career opportunity — or perhaps relocate after retirement — remember to review your will. Probate and trust laws are determined by the state you live in. A will or trust valid in one state may require modification to conform to another state’s laws. It is important to have an experienced professional in your new state look over your will and trust documents to make sure your wishes will be carried out without complications.

Gifts by will have become an integral part of the American philanthropic tradition. Tax laws encourage the support of charitable institutions through income-tax deductions and estate-tax savings. You can tailor charitable bequests to meet your personal and financial objectives. However, you should review those objectives periodically as they may change over time.

André R. Donikian, J.D., is president of Pentera, Inc., in Indianapolis, Ind. Pentera is a full-service planned giving company that works for charitable organizations throughout the United States. As a loyal Mayo Clinic patient, he provided this article as a gift to Mayo.
Outperforming all predictions

By Dianne M. Axen

“I was very fortunate to be born with no talent,” says former South Dakota Governor Frank Farrar. “That was the greatest thing that ever happened to me. Nothing in my life has been simple, and that has been an advantage, not a disadvantage.”

At 76, Mr. Farrar still pilots his own plane, maintains a law practice, competes in triathlons and inspires everyone around him. He credits Mayo Clinic with saving his life on two occasions.

Born and raised in Britton, S.D., Mr. Farrar’s first Mayo experience was in 1945. At the age of 15, while playing high school football, he suffered a knee injury that threatened the loss of his leg. When the family doctor referred him to Mayo Clinic, he made the plane trip to Rochester, Minn., by himself. In those days, knee replacement surgery was not yet an option.

“They put two nails and a plastic cartilage in my knee to hold it together,” says Mr. Farrar. The doctor told me, ‘Young man, these nails won’t last very long, and you’ll never be able to run or play golf.’”

“He was partially correct – I still can’t play golf, and I’m not that good at running, but the nails are still there,” says Mr. Farrar. But at age 56, he competed in his first triathlon, a short-course event in Des Moines, Iowa. Although he describes his running gait as something between a jog and race-walk, he found that he enjoys triathlons and has participated in them for two decades.

His steadfast perseverance, positive attitude and ability to find the humor in any circumstance have served Frank Farrar well throughout his life. He and his wife, Pat, have been married 52 years and have five grown children and six grandchildren. “We both received our degrees from the University of South Dakota. My wife graduated summa cum laude. I graduated summa cum lucky,” he says.

The Farrars were married during the Korean Conflict, and he then served two years in the U.S. Army as an infantryman. The couple later returned to Britton, S.D., where Mr. Farrar became a judge, state’s attorney, attorney general and then the governor of South Dakota. “I never could keep a job,” he laughs.

In 1992, at the age of 62, Mr. Farrar met the second major health challenge of his life. He was diagnosed with advanced stage IV non-Hodgkin lymphoma by Thomas M. Habermann, M.D., at Mayo Clinic Rochester and was given a poor prognosis. But with the same spirit of determination used to meet other life demands, Mr. Farrar asked Dr. Habermann if he could continue to run while undergoing chemotherapy. Dr. Habermann agreed that he could continue to run as he felt able. In the next six months Mr. Farrar competed in eight short-course triathlons.

After successful treatment, Mr. Farrar’s cancer has been in remission for 13 years. “I’m pretty lucky,” he says. “Sometimes it’s better to be lucky than smart.” Mr. Farrar continues to race because he finds it self-motivating. He has completed 23 Ironman races since he turned 65. “I believe that being in shape and exercise really saved my life,” he says. “The more you do, the more you can do — just like life.”

Over the years, Mr. Farrar has referred many friends and associates to Mayo Clinic. “I see Mayo as the best there is. It is efficient and reasonable. We feel good when we leave here,” he says.
Stewardship report

At Mayo Clinic, stewardship:
• ensures that gifts are used as the benefactors intended.
• helps benefactors understand the impact of their philanthropy.
• provides information on how gifts are being used.

The following pages highlight members of our recognition groups. Many benefactors choose to belong to one or more of these groups to enhance their philanthropic experience.

For our patients and friends:

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For more information on any of these benefactor groups or philanthropy at Mayo, please call 507-284-8540 or visit www.mayoclinic.org/development
There’s no other place like Mayo

By Suzanne Winckler

Mark Mazzarino, who turned 90 in September, is a first-generation American. His Italian parents emigrated to the United States in 1908 on a Hamburg steamship. To pay their passage, they worked on board — he was a cook in the kitchen, she cleaned cabins — and after settling in Illinois, Mr. Mazzarino’s father supported the family as a coal miner.

Mark Mazzarino embodies many of the characteristics associated with his generation of Americans. He grew up in an immigrant household of modest circumstances and as an adult combined hard work with the ability to seize opportunities that came his way. He made a substantial fortune in the oil business but was never interested in the trappings of wealth. He transformed personal tragedy — the death in 1960 of his young wife, Shirley, from cancer — into his crowning achievement. In 2004, he donated the bulk of his life savings to establish the Mark Mazzarino Endowment for Research at Mayo Clinic Cancer Center Arizona.

Mr. Mazzarino brings his same gusto from the oil fields to the field of cancer research, and his investment in Mayo Clinic inspires researchers to be as resolute in their work as he was as an independent oilman. When asked why he made his gift to Mayo Clinic, Mr. Mazzarino has a succinct reply: “I want to whip cancer.”

“We’re thrilled with Mr. Mazzarino’s gift,” says Laurence J. Miller, M.D., who heads the Mayo Clinic Cancer Center Arizona. “It allows us to dream and to bring those dreams to fruition. Mr. Mazzarino, in making this gift, motivates all of us. He sets a very high bar for us. He is providing Mayo with the opportunity to launch new programs and build a team of scientists that will be the best in the world.”

Mark Mazzarino is proud to have established the Mark Mazzarino Endowment for Research at Mayo Clinic Cancer Center Arizona.

Mayo Principal Benefactors

The Mayo Legacy

Established: 2003
Number of members: more than 350
Philanthropic requirement: leadership gifts to Mayo
Mr. Mazzarino was born in Hanna, Ill., in 1915. He trained as a machinist and worked for Shell Oil Co. in Illinois, where he helped develop a catalytic process for refining petroleum. In 1951, he went into the oil business on his own. His company, Mazzarino & Kapp Oil Producers, operated wells in Salem Field, one of the largest oil-producing areas in Illinois. At one point, his company was the second-largest producer in the state. In addition to his work in Illinois, Mr. Mazzarino opened three new oil fields in Oklahoma.

As a young man, Mr. Mazzarino began spending winters in Arizona to treat his asthma. (“That’s the only thing that’s ever bugged me,” he says about his health.) He moved to Scottsdale permanently in 1980. Mr. Mazzarino sums up this phase of his life with self-deprecating humor. “I saw how fast the area was growing, and I had some money lying around so I decided to buy land. If I had listened to my broker, I would own half of Scottsdale today.”

Mr. Mazzarino became a patient at Mayo Clinic in 1998. His admiration for the level of patient care — “There’s no other place like Mayo,” he says — and for the direction of Mayo’s cancer research led him to establish his generous research endowment, a decision he made without fanfare.

“I was unaware that Mr. Mazzarino had given a generous gift to Mayo until after he had made it,” says his physician, Kirk Anderson, M.D. “When he mentioned it to me later, he was so proud of the fact that at this time in his life he would leave a legacy that would go on after him. What still sticks in my mind are the smile and his feeling of satisfaction.”

Robert Spinner, M.D., follows his intuition with confidence. He applied to Mayo Medical School early decision. He joined The Doctors Mayo Society during his first year of residency at Mayo Clinic. He called his mother to share with her that he just met his future wife, Alexandra Wolanskyj, M.D., only an hour after meeting her — and they married just six months after that initial encounter.

“When you believe in something, it’s easy to see the bigger picture,” he says. “And I’ve never regretted any of these decisions.”

Both Dr. Spinner and Dr. Wolanskyj’s fathers were physicians. Dr. Spinner grew up in New York, and Dr. Wolanskyj was raised in Canada and attended medical school there.

Their educational pursuits brought them both to Mayo Clinic during the late 1980s and 1990s (Dr. Spinner for medical school and a residency in neurologic surgery, and Dr. Wolanskyj, encouraged by her parents, for residency in internal medicine and fellowship in hematology/oncology), but their paths didn’t cross until years later.

While Dr. Wolanskyj was working in a private practice in Ohio, her mother needed medical attention. “There was no doubt in my mind that she would come to Mayo,” Dr. Wolanskyj
says. “Even though, because she lived in Canada, it
was a 100 percent out-of-pocket expense.”

Her mother was admitted to Saint Marys Hospital
on a Sunday — during the same time that Dr. Spinner
was covering for a colleague for two hours. Dr. Spinner
checked in on Dr. Wolanskyj’s mother and noticed her
daughter, “a beautiful woman combing her mother’s
hair,” he says. The two were engaged three weeks
later and married in six months.

Loyalty to Mayo Clinic

Although both physicians practiced in other places,
they always felt Rochester was home. “In fact, I missed
Mayo so much, that I would find reasons to come here
and do research. I felt a sense of relief when I got off
the airplane,” says Dr. Spinner. “On our honeymoon,
my wife pointed out to me that I would never be
happy anywhere else — my heart is at Mayo.” They
both joined the Mayo Clinic staff after they married.

Dr. Spinner’s father experienced the “Mayo way”
when he lived with the couple for his last year while
undergoing medical treatment. “Everyone he came
into contact with treated him with dignity and respect,”
says Dr. Spinner. “While they recognized that he was
a retired surgeon, he observed that all other patients
around him were treated in the same fashion. He also
became a proud supporter of Mayo.”

Shortly after Dr. Spinner’s father passed away, the
couple welcomed their son, Maxwell, a name chosen
in honor of his late grandfather, into their lives.

A lifelong plan

“My philanthropic commitment is in appreciation for
Mayo always believing in me,” Dr. Spinner says. “This is
just a first step in our lifelong priority of giving to Mayo.”

Their philanthropy is in honor of the faculty and mentors
at Mayo that they aspired to be like during their training
and the opportunities they have been given while on staff,
as well as the excellent care that their parents received.

“My father and I talked about my career and what
I would do after I finished practicing medicine,” says
Dr. Spinner. “I told him I wanted to raise money for
Mayo when I retired. He looked at me and said,
‘That’s beautiful.’”
Mayo teamwork vital for care

By Patricia R. Martin

Andrew Novak credits Mayo teamwork for diagnosing his wife’s troubling illness. For five years, Katalin Novak had suffered a disabling condition that eluded diagnosis until she came to Mayo Clinic Rochester.

“Mayo did a great job,” Mr. Novak says. “In three days at Saint Marys Hospital, they got together and figured it out. The most important aspect of Mayo is it is a team effort.”

Mr. Novak knows a lot about teams. Before his retirement in 2000, he became consultant to the royal family of an Asian country and created custom interiors for the family’s private aircraft. The work required bringing together designers and craftsmen experienced in such specialties as installing gold leaf on doors or rare minerals on countertops. For over three decades he directed the company, and together with well-known designer Michael Reese, fitted out 27 airplanes, mostly Boeing 747s, and now, “just for something to do,” he is refitting one plane.

A native New Yorker, he had been a stockbroker and had owned race horses before joining a trading company that had business interests in South Asia, which led him to start his airplane company.

Mrs. Novak had a harrowing escape from her native Hungary following the revolution there in 1956. She and her brother found their way first to Vienna, Austria, and then immigrated to Norway. The Novaks met in New York in the 1960s and moved in the 1980s to Texas, where they relocated the business. They have four children, three of whom live in Florida and one in Virginia.

When his wife became increasingly incapacitated, Mr. Novak sought help for her at Mayo Clinic. “My stepfather had taken my mother to Mayo,” Mr. Novak says. “He told me ‘Mayo is one of the best medical facilities in the country.’ He was right.”

Bringing Mrs. Novak to Rochester confirmed this. “I was immediately impressed and fascinated by the way Mayo does things,” he says. “It is like what we do with an airplane: It has to be a coordinated team effort.

“Mayo is very organized,” he adds, “and the information system is so important. Everyone on the team has access to the right information, and everyone makes sure the patient knows what is going on.”

The Novaks have become Mayo benefactors to show their gratitude for the care with which Mrs. Novak has been diagnosed and treated. “In some small way, we’d like to make a difference,” he says. “Mayo needs to continue to progress, and I would like to help Mayo continue doing what it does so well.”

Mayo Major Benefactors
Established: Early 1970’s
Number of memberships: more than 1,900
Philanthropic requirement: $100,000 to support the mission of Mayo Clinic
Irene Villa admits that she was “a little scared” when she first started piloting a plane, but she was determined to learn to fly in order to “back up” her husband, Lucio, an accomplished pilot. In fact, Mr. Villa’s skill as a pilot may have helped bring the couple together.

The Villas met at the home of mutual friends in Mexico in the early 1970s. At that time both lived in California, and, when he offered to fly her home, she accepted. They later married and enjoyed more than 25 years together before his death.

Mrs. Villa, who grew up in California, worked in her family’s jewelry business before her marriage. She enjoyed golf — a sport her husband tried but never mastered — and traveled extensively, especially in Europe and Mexico.

Her husband was born and raised in Italy, and the couple spent part of almost every summer in Northern Italy. “I love it there,” Mrs. Villa says. “I love the food, the language, the people.” Influenced in part by her travels, she became an expert cook. “I used to fly to Los Angeles from Oregon for one of Irene’s meals,” says her cousin, Jeff Reingold.

The influence of Lucio Villa and Italy is still strong for Mrs. Villa. She majored in English and French as a student at the University of California-Los Angeles six decades ago and today continues to study Italian. “I’m learning Italian to honor my husband’s memory,” she says. “He was a great part of my life.”

During much of their life together, Mr. Villa was in the appliance business in California, and the couple lived in Los Angeles. About ten years ago, they moved to Scottsdale, Ariz., “to be close to Mayo Clinic,” Mrs. Villa says. “We were getting older, and we wanted to be near excellent health care.”

The Villas chose to make gifts to Mayo using real estate to fund charitable remainder trusts that provide a lifetime income for them and then to the survivor. After Mr. Villa’s death, Mrs. Villa funded a charitable gift annuity with Mayo, a gift which also provides an

Irene Villa wants health care at Mayo “to be there for others.”

Lucio Villa introduced his wife, Irene, to flying and to Italy.

The Mayo Legacy

The Mayo Legacy is an organization of Mayo patients, staff and benefactors who provide a bequest in their will or another type of planned gift to support our work. There are no membership fees or required gift amounts to join The Mayo Legacy. Currently, more than 3,200 individuals belong to The Mayo Legacy. Members live in 50 states and 14 countries.
income to her for as long as she lives. “These arrangements have been a wonderful way to provide a gift for Mayo and still receive an income from the gifted property,” Mrs. Villa says. And even though they elected to use this form of giving to Mayo, they were still able to designate the use of the gifts by Mayo. Mrs. Villa’s special interest is in supporting medical research on heart disease and cancer.

“I am grateful for the care Mayo provided members of my family,” Mrs. Villa says, “and I want it to be there for others.”

The healing arts
Mayo Sponsors celebrates the connection between art and healing

By Matt Derechin

A new five-year series of recognition tiles, highlighting the contribution art makes to medicine, is giving Mayo Foundation a unique opportunity to celebrate the continuing importance of Mayo Sponsor members.

Essential to creating a healing environment that addresses patients’ emotional and physical needs, artwork at all three campuses is an important component of Mayo Clinic’s mission to provide the best care to every patient every day. Today many of these works are part of a collection maintained by Mayo Clinic Center for Humanities. Mayo has a history of integrating the humanities with medicine, dating as far back as the 1930s, when staff members performed holiday concerts for patients.

The first tiles in the series portray compelling art from Mayo’s campuses in Arizona and Minnesota. “Hearts of Conviction,” from Mayo Clinic Arizona, portrays the wife of a Lakota warrior in a tender moment before her husband departs for battle. The art from Mayo Clinic Rochester is a sculpted angel, whose serene gaze highlights the intricately designed ceiling of the meditative space at Saint Marys Hospital Chapel.

David Ahlquist, M.D., medical director for development, says a natural connection exists between the roles that art and philanthropy have in ensuring excellence at Mayo Clinic.

“The artwork at our three campuses inspires all of us at Mayo — patients, medical staff and allied health colleagues,” Dr. Ahlquist says. “In addition to providing us with essential funding, our benefactors inspire us with their commitment to Mayo and to advancing medicine. It is an honor to work with a group of such philanthropic people.”

In 2004, there were 684 members of Mayo Sponsors, the only annual philanthropic membership group at Mayo. Annual support from Mayo Sponsors members helps ensure that Mayo will have the necessary resources to continue providing compassionate care for patients, advancing medical progress and educating our future physicians.

Each member of this group provides support to Mayo Foundation that totals $10,000 or more in a calendar year.
Mayo Clinic creates “Office of the Future”

A scientifically designed office environment is the practical realization of a decade of research at Mayo Clinic. James Levine, M.D., an endocrinologist at Mayo Clinic Rochester, has spent his career studying how humans expend energy. His recent research findings show that genomic and biological differences impact how many calories a person burns during everyday tasks. It proved the long-discussed concept of a “slow metabolism” as a factor in obesity. It also showed that people can increase their caloric “burn rates” by integrating more movement into their daily regime. Dr. Levine calls this process “non-exercise activity thermogenesis” (NEAT).

In the Mayo tradition of quickly translating medical discoveries into patient care, Dr. Levine created a NEAT-oriented office. “This is a fully functioning office. My entire staff works here,” explains Dr. Levine, as he walks on a moving treadmill that serves as both a desk and computer platform. “The idea is to introduce an environment that will encourage activity in the workplace. Just as it’s hard to be a couch potato without a couch, it’s hard to sit all day at work without a chair or a conventional desk or cubicle.”

Researchers identify a good predictor for those at greater risk of Alzheimer’s disease

By looking at the ratio between two forms of amyloid beta (Aβ) protein, researchers at Mayo Clinic believe they have found a way to identify which normal, elderly people might develop Alzheimer’s disease (AD) and its precursor, mild cognitive impairment.

Mayo Clinic Jacksonville scientist Steven G. Younkin, M.D., Ph.D., was among the first to discover that Aβ is a secreted protein normally present in blood and spinal fluid. Most Aβ is in a form made up of 40 amino acids (Aβ40), but a small percentage has 42 amino acids (Aβ42). In all people with Alzheimer’s, Aβ42 is deposited in the brain to form senile plaques, which are one of the pathological hallmarks of the disease.

Dr. Younkin and Mayo Clinic neurologist Neill R. Graff-Radford, M.D., led a team of researchers who analyzed Aβ to determine if it is useful for identifying elderly individuals most at risk for developing AD. The Mayo team looked at the ratio of Aβ42 to Aβ40 in blood. They took samples from 563 normal volunteers and followed them for two to 12 years. Researchers found that subjects with the lowest ratio of Aβ42 to Aβ40 were at the greatest risk of getting AD and getting it sooner.

“If our findings can be confirmed in additional follow-up studies,” says Dr. Younkin, “it seems likely that the plasma Aβ42/Aβ40 ratio can become an important biomarker for developing and implementing a preventive approach to AD therapy.” A study to follow 3,000 people for five years is already under way.
Mayo Clinic Collaborative Research Building promises hope, urgency, solutions

Wielding super-sized scissors, six people cut a large red ribbon to officially open the doors of Mayo Clinic Collaborative Research Building in Scottsdale, Ariz., on June 30, 2005.

The three-story, 110,000-square-foot research facility, which was built in a record time of 14 months, will be home to scientists from Mayo Clinic and Translational Genomics Research Institute, or TGen. The building brings multiple strategic partners dedicated to translating discoveries based on the human genome to ease the burden of cancer and other devastating diseases.

“This collaboration signifies hope for patients battling cancer. All of us in this partnership understand the urgency, and together we are committed to moving swiftly toward solutions that will make a difference in our patients’ lives,” said Jeffery M. Trent, Ph.D., president and scientific director of TGen.

The $25 million building was funded and inspired by Scottsdale developer Tom Hornaday of Hornaday Development. Mr. Hornaday’s mother died of breast cancer at age 52, and he and his wife, Ruth Ann, lost their daughter, Kristi, 26, to melanoma. “That’s why we build these buildings,” Mr. Hornaday said.

Lance Armstrong Foundation funds quality-of-life study

Support from the Lance Armstrong Foundation is helping Mayo Clinic Jacksonville psychologist Steven Ames, Ph.D., conduct research to improve the quality of life for men who have prostate cancer with rising prostate-specific antigen levels.

Although survival rates for men with localized prostate cancer are high, past research has shown that many prostate cancer survivors experience clinically significant increases in stress and decreases in their quality of life.

The three-year, $225,000 research study will evaluate the needs of this group of men and develop a behavioral stress management intervention designed to reduce their psychological stress and improve their quality of life.

Men interested in participating in this research study must be free from cancer in other areas of their body and be willing to participate in a two-hour group discussion. For information, call the Clinical Studies Unit at Mayo Clinic Jacksonville at (904) 953-2941.
Surgery gives fresh start to patients with thickened hearts

Patients who have surgery for a thickened heart muscle, a leading cause of sudden cardiac death in young people, don’t just get symptom relief; their mortality rates match those of the general population, according to findings of a Mayo Clinic study published recently in the *Journal of the American College of Cardiology*.

Hypertrophic cardiomyopathy (HCM), an abnormal thickening of the heart, affects more than 500,000 Americans. HCM involves a thickening of the heart muscle walls, particularly the wall (septum) that separates the two main pumping chambers. That thickening can affect blood flow into and out of the heart, which may lead to symptoms including shortness of breath, chest pain, dizziness, palpitations or fainting after exertion. HCM can cause sudden death by sending the heart into a dangerous electrical rhythm pattern and is the most common cause of death during athletic competition.

The primary cause of HCM seems to be genetic. About half of HCM patients have a close relative with the disease. Treatments may include medications such as beta-blockers to slow the heart’s contractions, and placement of an internal defibrillator to shock the heart back into normal rhythm. For patients with severe obstructions of blood flow whose symptoms don’t respond to medications, a surgical procedure (myectomy), which involves removing a portion of the thickened muscle wall, provides excellent symptom relief.

“The improvement in symptoms for myectomy patients has been well documented,” explains Steve Ommen, M.D., the Mayo Clinic cardiologist who led the retrospective study of 1,337 consecutive patients evaluated from 1983 to 2001. “Until now, we didn’t know whether feeling better translated into living longer. This new research suggests that for these younger patients, whose average age was 45 at the time of surgery, the operation gave them the same life expectancy as someone who had never had the disease.”

Florida awards $1 million to kidney cancer research group

A quartet of Mayo Clinic Jacksonville researchers recently received $1 million from the state of Florida for a research project aimed at enhancing the understanding of renal cell carcinoma, the most common form of kidney cancer. Ultimately, the goal of the project is to improve prevention, diagnosis and treatment of renal cancer.

Although renal cell carcinoma is less common than other cancers, it is currently among only a handful of cancers for which both incidence and mortality rates are steadily increasing. The state funding will allow the Jacksonville group to perform a multidisciplinary project comprised of four individual components: an epidemiological study led by Alexander Parker, Ph.D., examining the connection between cigarette smoking and renal cell carcinoma at a molecular level; a laboratory study led by Panos Anastasiadis, Ph.D., identifying factors that increase the likelihood of metastasis in renal cell cancer; a laboratory study led by John Copland, III, Ph.D., investigating new drug therapies for renal cell cancer; and a clinical research study led by Steven Ames, Ph.D., designed to identify the psychosocial needs of patients with renal cell carcinoma.

The $1 million award is the maximum grant available from the Florida Biomedical Research Program, which is funded by proceeds from the 1997 settlement of Florida’s lawsuit against the tobacco companies to recover costs of care for tobacco-related disease. The funding will cover two years’ work, the researchers say, at which point they will be in a strong position to attract long-term support from the National Institutes of Health and other federal agencies.
Mayo Clinic teams up with U.S. Coast Guard and Hollywood entertainment industry to reduce tobacco use

Mayo Clinic Nicotine Dependence Center, a leader in the treatment of nicotine addiction, recently expanded Mayo Clinic Tobacco Quitline and telephone counseling services to help the U.S. Coast Guard and the entertainment industry.

The Health Promotion Division of the U.S. Coast Guard introduced a new tobacco cessation telephone service for more than 200,000 Coast Guard active duty members, their families, reservists and civilian employees. This free service is provided by Mayo Clinic Tobacco Quitline, which is based at Mayo Clinic Rochester.

In Hollywood, Calif., the American Legacy Foundation and the Entertainment Industry Foundation added a Mayo phone counseling component to their “Hollywood Quits” program. The service is part of the entertainment industry’s ongoing efforts to decrease smoking among the nearly 250,000 employees in Southern California.

The tobacco cessation services are products of Mayo Management Services, Inc. — a Mayo health company that provides services to 14 million people through state quitlines, corporations and health plans around the nation, including Mayo Clinic. The programs receive clinical oversight, research data and consultative support from the staff of Mayo Clinic Nicotine Dependence Center.

Mayo Clinic Arizona embarks on heart transplant program

The promise of a healthy heart will soon be a reality for patients in need of heart transplantation at Mayo Clinic Arizona. This surgery has been performed at Mayo Clinic Rochester since 1988 and at Mayo Clinic Jacksonville since 1998. With the first heart transplant surgery anticipated to take place at Mayo Clinic Hospital in Phoenix in late 2005, Mayo Clinic truly becomes a national provider of this surgical specialty.

The surgical director of the new Heart Transplant Program is Francisco A. Arabia, M.D., a nationally recognized specialist in cardiovascular and thoracic surgery. Robert L. Scott, M.D., Ph.D., is the program’s medical director for Congestive Heart Failure and Heart Transplantation. Dr. Scott is an eminent authority in the areas of heart failure, heart transplantation and ventricular assisted devices.

“We are very excited about recruiting two of the top cardiac specialists in the country,” says Victor F. Trastek, M.D., chair of the Board of Governors of Mayo Clinic Arizona. “Phoenix is the fifth largest metropolitan area in the country and, until now, the only city of its size without a heart-transplant program. We are very pleased to be able to provide this program to our patients.”

Dr. Arabia was formerly physician leader of the Heart Program and surgical director of the Lung Transplant Program at University Medical Center in Tucson, Ariz. Dr. Scott comes from Ochsner Clinic Foundation in New Orleans, where he served as medical director of Heart Transplantation, director of Heart Failure Services and medical director of the Coronary Care Unit.

Mayo Clinic Arizona has a strong foundation in transplantation medicine. Since 1999, it has been performed more than 650 solid organ (liver, kidney and pancreas) transplants with one-year survival rates above the national average. Mayo Clinic Arizona is the largest provider of living-donor liver transplants in the Mayo system and the seventh largest in the country.
Mayo Investigator awarded $4.5 million from NIH for transplant research

Mayo Clinic transplantation researcher Christopher G. A. McGregor, M.D., has been awarded a $4.5 million grant by the National Institutes of Health to continue his groundbreaking work in xenotransplantation, the transfer of organs or tissues from one species to another.

The five-year grant will support Dr. McGregor’s investigations into genetic engineering and immunosuppressant approaches to overcome the molecular hurdles that cause organ rejection. Specifically, his laboratory is looking at ways to develop acceptable donor organs in pigs for transplantation into humans. The objective is to stem the number of human deaths due to a shortage of organ donors.

“We are delighted to receive this grant which will allow us to continue progress toward relieving the pressing organ shortage,” says Dr. McGregor. “This grant both recognizes the great progress that has been made in xenotransplantation in our center and supports our ongoing strategies to utilize this technology to relieve patient suffering.”

An estimated 80,000 patients wait for a donated organ each year, while only 24,000 transplant operations are performed annually. Seventeen people die each day waiting for a donor organ. Among heart patients, only 2,100 receive transplants each year, while perhaps 40,000 might benefit. Not only would availability of animal organs make more transplants possible, xenotransplantation would also produce organs in various sizes and offer greater reliability than many current transplant options.

Jacksonville physician leads breast cancer breakthrough

Results from two large clinical trials involving more than 5,000 women with HER-2 positive invasive breast cancer show that patients who received trastuzumab (Herceptin®) in combination with chemotherapy had a significant decrease in risk for breast cancer recurrence. The risk of recurrence was reduced by 52 percent, when compared with women who received the same chemotherapy without trastuzumab.

Edith A. Perez, M.D., an oncologist at Mayo Clinic and co-director of the Multidisciplinary Breast Clinic in Jacksonville, was the principal investigator for one of those trials. “These findings are dramatic,” says Dr. Perez, whose research was profiled last year in Mayo Magazine. “Women with HER-2 positive breast cancer had a high risk of the cancer returning and of dying from breast cancer, and we have essentially changed the natural history of the disease with this intervention. We showed that we could decrease recurrence by 52 percent. That is the largest improvement we’ve seen in more than 30 years, and perhaps ever, in the treatment of breast cancer.”
Because black cohosh is widely marketed as a remedy for hot flashes — which three out of four women in the United States experience during menopause — Barbara Pockaj, M.D., a surgeon at Mayo Clinic Arizona, led a study to determine the effectiveness of the herb. Black cohosh is derived from a plant in the buttercup family, which is native to North America.

The study was conducted in partnership with the North Central Cancer Treatment Group, a clinical research network of cancer specialists from Canada, the United States and Mexico, which is sponsored by the National Cancer Institute.

Results showed that black cohosh is no more effective than a placebo in reducing hot flashes. The double-blind, randomized study involved 132 women divided in two groups. Each participant kept a hot-flash diary. The women received no treatment the first week. They then took black cohosh pills for four weeks followed by four weeks of placebo, or vice versa. Mayo researchers measured patient preferences, if any, after each treatment period. The results showed that 38 percent of the women preferred the placebo, 34 percent preferred the black cohosh and 28 percent did not prefer either treatment.

Findings should help women and their physicians evaluate methods to help control or minimize the affects of hot flashes.

**Study finds black cohosh no better than placebo in treating hot flashes**

Autumn is and will continue to be an exciting time of progress for Mayo Clinic Hospital in Jacksonville, with important construction milestones already being noted.

Progress includes work on the steel framework that will support the hospital’s bed tower and preparations for a face lift for the Mayo Building, which eventually will serve as the hospital’s main entrance. These activities will set a dramatic context for the hospital groundbreaking celebration, planned for November 11, 2005, and are on pace with a construction timeline that has the hospital opening in early 2008.

“An exciting momentum is gathering around the hospital project, and I expect that we will see this wave of enthusiasm continue throughout construction,” says George B. Bartley, M.D., chair of the Board of Governors at Mayo Clinic Jacksonville. “None of this would be possible without the partnership of our benefactors, for whose extraordinary support we are grateful.”

Construction progress has increased since the sale of St. Luke’s Hospital in June. Mayo will continue to lease St. Luke’s until the new hospital opens.

The excitement surrounding the hospital’s construction is complemented by important fund-raising progress. To date, more than $75 million has been received from grateful patients, corporations and foundations. Fund raising activities will continue to ensure the hospital is state-of-the-art when it opens.

**Autumn sees important progress for Mayo Clinic Hospital**
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Timothy M. Sullivan, M.D., and Thoralf M. Sundt III, M.D., discuss heart health with cardiac patient Brad Lunde (featured on the cover.)
Mary and Tom Davie are homemakers of a very special kind. Over the years, they have welcomed and comforted hundreds of Mayo patients recovering from transplant surgery.

In her 14 years as a social worker in the Transplant Program at Mayo Clinic Rochester, Mrs. Davie came to realize that the emotional needs of transplant patients extend well beyond their postoperative hospital stay. Together with Edward Pompeian, a kidney transplant patient in Rochester, she and others at Mayo raised the funds and found the first home for Gift of Life Transplant House. Tom, an administrator with Rochester Public Schools, was his wife’s ex-officio advisor and handyman.

In 1998, the Davies relocated to Arizona. Mary continued to work at Mayo Clinic in human resources; Tom retired, briefly. “I was expecting not to do anything. It was not fun at all,” he says. Before long, at the urging of colleagues at Mayo, the Davies began scouting for properties and raising funds to replicate a transplant home in Arizona.

They found the ideal setting at Brusally Ranch, a former Arabian horse farm that Sally Tweed Groom had given to Mayo Clinic. The Arizona Transplant House at Brusally Ranch opened in 1999, and in six years more than 1,500 transplant patients and their caregivers have stayed in the gracious Spanish-style home.

Tom Davie, after his brief brush with retirement, became the director of the Arizona Transplant House, and Mary, who retired from Mayo Clinic in 2003, sits on the board of the Arizona Transplant House Foundation.

Tom and Mary Davie make time for other things — such as two grandsons, church and their home-away-from-home in Wisconsin — but the care of Mayo patients in the process of healing is never far from their minds. “Giving back to them is our way of acknowledging all the advantages we’ve had in life,” says Mrs. Davie.